Features

- Built-In VCR Plus+ Programming with Cable Box Control
- Front Audio Video Jacks
- MBR3429 Multi-Brand Remote Control
- Automatic Head Cleaner
- Variable Slow Motion
- VCR Flashback
- Message Center Display
- On-Screen Programming
- 1 Year, 8 Event Timer
- Instant Recording
- 181 Channel Capability
- Auto Channel Search
- Auto Digital Picture Tracking
- Center Load Tape System
- Quick Start Loading
- Auto Playback System
- Auto Counter Reset
- Counter Memory
- Index Search System
- HQ Circuitry

VRL4170

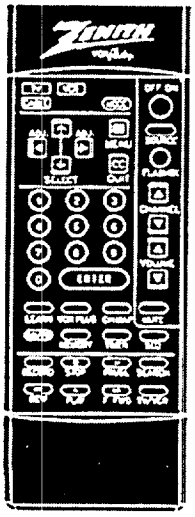
ZENITH

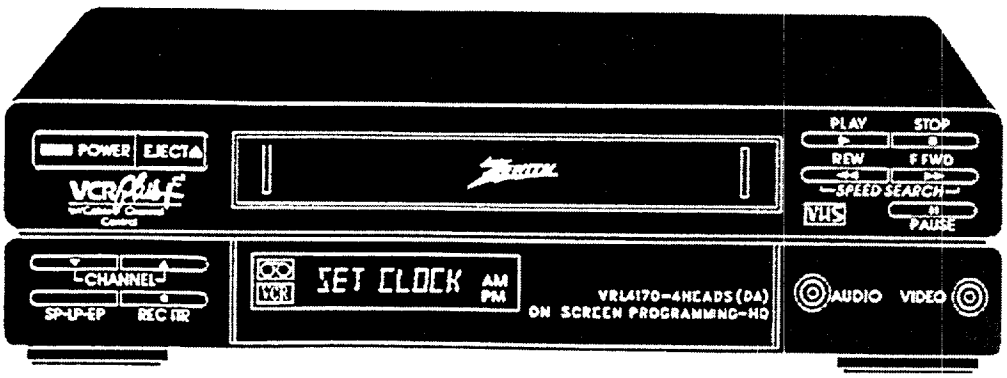
THE QUALITY GOES IN BEFORE THE NAME GOES ON®

VHS

Video Cassette Recorder Operating Guide and Warranty

Return your Product Registration Card and your VCR could be Free!





WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER TO QUALIFIED SERVICE PERSONNEL.

TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Safety Tips

Refer to the "Safety Tips" booklet that came with your product for important safety considerations.

Note to Cable TV System Installer

This reminder is provided to call the cable TV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of the cable entry as practical.

Power-Cord Polarization

This product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other.) This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug by altering it in any way.

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION

POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

REGULATORY INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Do not attempt to modify this product in any way without written authorization from Zenith Electronics Corporation. Unauthorized modification could void the user's authority to operate this product.

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General Information

Introduction

Welcome into the family of Zenith Video Recorder owners. This guide provides instructions on how to operate your new VCR. It is supplemented by a booklet containing Safety Tips. We urge you to read these publications carefully so that you will receive full enjoyment from your new Zenith VCR for many years to come.

Your new Zenith VCR has been designed and built to give you the very best in quality, features and performance. There are approximately 75 regional Zenith distributors and thousands of distributor-approved Zenith video recorder service centers throughout the U.S. and Canada who can attend promptly and effectively to ordinary service needs.

If you should have an unusual performance or service problem that cannot be satisfactorily resolved by your distributor-approved Zenith video recorder service center, contact the regional Zenith distributor in your area, or write or call:

Zenith Electronics Corporation
Customer Service Department
1900 N. Austin Avenue
Chicago, Illinois 60639-5079
Telephone: (312) 745-5152
Mon-Fri, 8:00 a.m. - 4:30 p.m. Central Time

Send the model number, serial number, and date of purchase or original installation, with a full explanation of the problem and the service history. We will welcome the opportunity to look into your specific question or problem and to be of assistance in resolving it promptly.

The model and serial numbers of your new VCR are located on the VCR cabinet. For your future convenience and protection, we suggest that you record these numbers here:

Model No. _____

Serial No. _____

Installation Considerations

Before you install your VCR...

Ventilation – Proper ventilation keeps your VCR running cool. Air circulates through perforations in the back and bottom of the cabinet. Do not block these vents or you will shorten the life of your VCR.

Power Source – Your VCR is designed to operate on normal household current, 120 volt 60 Hertz AC. Do not attempt to operate it on DC current.

Power Cord – Your VCR power cord has a polarized plug as required by Underwriters' Laboratories. It has one regular blade and one wide blade and fits only one way into a standard electrical outlet. If the blades will not enter either way, your outlet is very old and non-standard. A new outlet should be installed by a qualified electrician.

Safe Operation – Your VCR is manufactured and tested with your safety in mind. However, unusual stress caused by dropping or mishandling, exposure to flood, fire, rain or moisture, or accidental spilling of liquids into the VCR, can result in potential electrical shock or fire hazards. If this happens, have your VCR checked by a service technician before using it again.

Please read and observe each safety point in the "Safety Tips" folder when installing and using your VCR.

- **Plugging in Your VCR** – Be sure to plug your VCR into an "unswitched" AC power source. The "switched" AC outlets found on some video equipment will not continue supplying power to the VCR once the equipment is turned off. If the power to the VCR is interrupted for an extended time, you will have to reset the clock in the VCR.
- Keep the video recorder and video cassette away from strong magnetic fields.
- Use only Zenith approved and recommended accessory units with your Zenith video recorder to avoid potential hazards.
- Save the shipping carton and packing material. They will come in handy if you ever have to ship your video recorder. For maximum protection, re-pack the video recorder as it was originally shipped from the factory.

Moisture condensation is apt to occur under the following conditions:

- When the video recorder is moved from a cold place to a warm place.
- Under extremely humid conditions.

In locations where moisture condensation may occur:

- Keep the power cord plugged into an AC outlet and the POWER switch set to ON. This will help prevent condensation from occurring.
- When condensation has occurred, it will not evaporate quickly once the power is switched on. Wait a few hours for the video recorder to become dry before using the video recorder.

Specifications

These specifications are subject to change without notice. Weight and dimensions are approximate.

Power Requirements

Operating Voltage
- 120 V, 60 Hz

Power Consumption
- 30W

Environmental Conditions

Operating Temperature
- 41° F to 95° F (5°C to 35°C)
- Relative Humidity 5% to 80%

Storage Temperature
- -4° to +140° (-20° C to +60° C)
- Relative Humidity 5% to 80%

Physical Characteristics

Dimensions (W x H x D)
- 14.2 x 3.5 x 13.4 Inches (360 x 88 x 340 mm)

Weight
- 12 lbs (5.5 kg)

Video System

Format
- VHS 1/2 inch (12.7 mm) Cassette

Signal
- NTSC color/EIA monochrome (525 lines/60 fields)

Input
- 1.0 Vp-p, 75 ohms unbalanced, negative sync

Output
- 1.0 Vp-p, 75 ohms unbalanced, negative sync

Signal to Noise ratio
- ≥43 dB (SP speed)

Signal Processing
- HQ enhancement circuitry

Audio Systems

Monaural
- 1 Channel standard VHS

Frequency Response
- 70 to 10,000 Hz

Signal to Noise Ratio
- ≥40 dB (SP speed)

Connections

Input
- Minus 8 dB into ≥47,000 ohms

Output
- Minus 8 dB into ≤1,000 ohms

Recording System

Type
- Rotary Helical Scan

Heads
- 4 Heads Double Azimuth (Slant Design)

Speeds
- SP- 1 5/16 IPS (33.34 mm/sec)
- LP- 21/32 IPS (16.67 mm/sec)
- EP- 7/16 IPS (11.12 mm/sec

Maximum Time
- SP- 2 Hours 40 Minutes (T-160 tapes)
- LP- 5 hours 20 minutes (T-160 tapes)
- EP- 8 hours (T-160 tapes)

Tuning System

Type
- 50--800 MHz Frequency Synthesized

VHF Channels
- 2 to 13

UHF Channels
- 14 to 69

CATV Channels
- 1 to 125 (4A, A to W, W + 1 to W +84, A-5 to A-1)

Input
- 1.0 Vp-p, 75 ohms unbalanced

Output
- 1.0 Vp-p, 75 ohms unbalanced

Audio Signals
- Monaural (Frequency Modualted)

Timer

Program Capacity
- 1 Year/8 Events

Power Backup
- 10 seconds

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Note: This is a task oriented operating guide and is broken down into the steps one would ordinarily follow in using this VCR; VCR/Remote controls, Installation, VCR Setup, Playing Tapes, Recording Tapes, etc.

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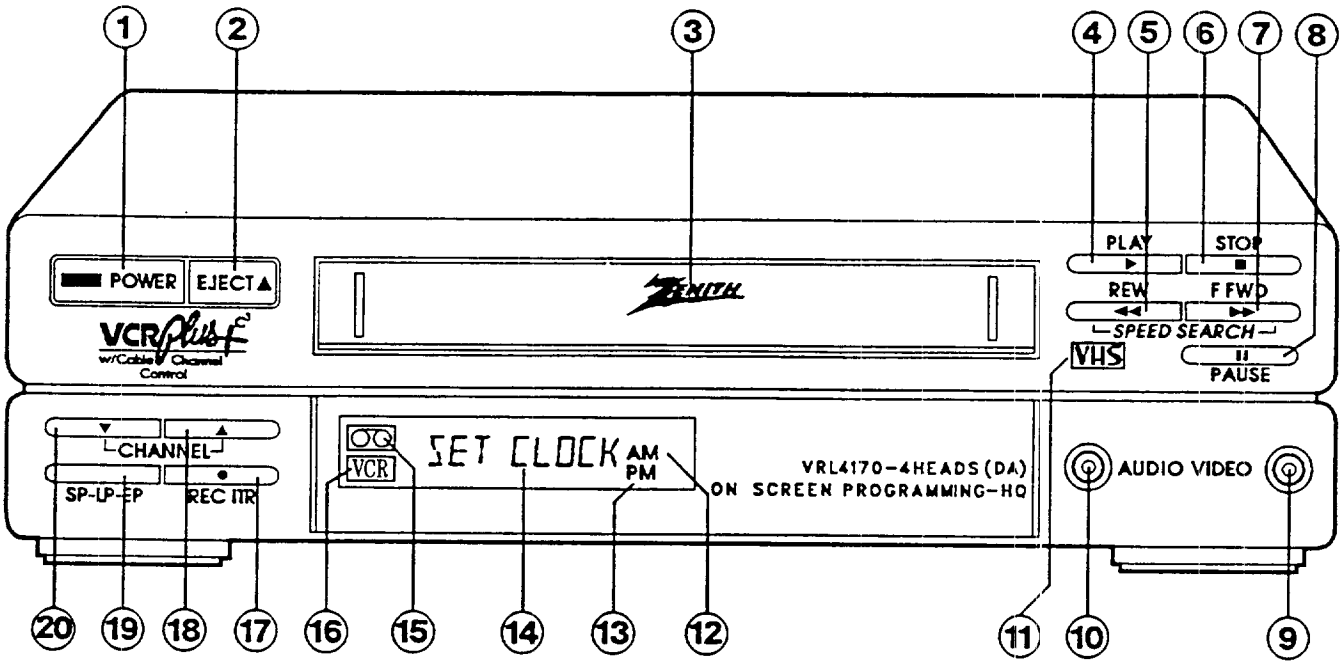
VCR Front Panel Controls



1. **POWER** -- Press to turn VCR on or off. Red light will be on while VCR is on.

2. **EJECT** -- Press once to eject tape.

3. **CASSETTE LOADING COMPARTMENT DOOR** -- Insert your VHS cassette tape into the compartment until VCR loads the tape.

4. **PLAY** -- Press to play a tape in the VCR.

5. **REW** -- Press to rewind a tape in the VCR.

6. **STOP** -- Press to stop playing a tape.

7. **F FWD** -- Press to fast forward a tape in the VCR.

8. **PAUSE** -- Press to momentarily cease VCR recording or to obtain a still picture while playing a tape.

9. **VIDEO** -- Front panel alternate video input jack.

10. **AUDIO** -- Front panel alternate audio input jack.

11. **VHS Logo** -- You must only use tapes that have the VHS symbol on them.

12. **AM** -- Symbol tells you current time is set at AM.

13. **PM** -- Symbol tells you current time is set at PM.

14. **CLOCK/MESSAGE CENTER** -- Clock remains on whether VCR is operating or not. If a power failure occurs the clock will reset to **SET CLOCK.** A power failure will also erase some information; the same will happen if you disconnect the power cord.
Message Center -- Information will be displayed in the message center detailing the VCR's current operational mode.

15. **CASSETTE LOADED VCR SYMBOL** -- A cassette tape is loaded and ready for operation in the cassette loading compartment.

16. **VCR** -- This symbol lights when the VCR mode has been selected by means of the TV/VCR key on the remote control or by playing a tape.

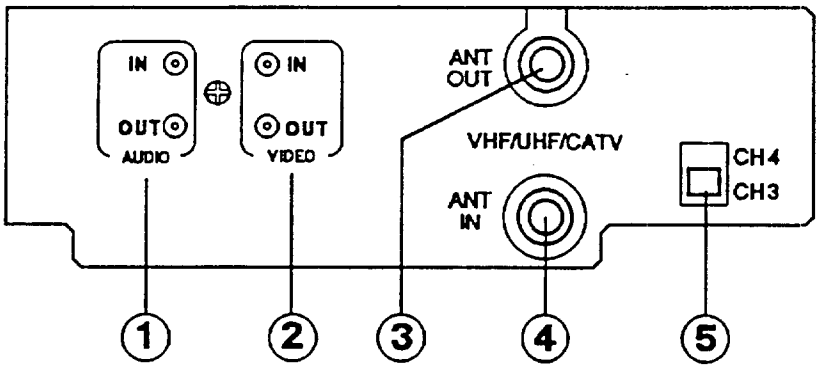
17. **REC ITR** -- Press to make an instant recording of what you see on your TV screen or other video input.

18. **CHANNEL UP** -- Press once to move channel number to the next set higher channel.

19. **SP/LP/EP** -- Press to change tape recording speed. SP is Standard Play, LP is Long Play and EP is Extended Play.

20. **CHANNEL DOWN** -- Press once to move channel number to next set lower channel.

VCR Back Panel Connection Jacks



The **OUT** jacks will be used to send the VCR signals out to other sources. The **IN** jacks will be used to bring signals into the VCR. (See Installation.)

Use these jacks for improving the audio and video signal performance of the VCR by, for example, connecting the VCR to a stereo system or to the input jacks on a stereo TV. They are also used to connect other units such as a video camera, camcorder, Stereo Hi-Fi or another VCR for dubbing purposes. These other sources are accessed by changing the VCR source to AUX mode. (See Section 5 VCR Setup.)

1. **Audio**

AUDIO OUT -- Connection jack used to send the VCR audio signal to other sources

AUDIO IN -- Connection jack that receives the audio signal of a video camera, camcorder or other source.

2. **Video**

VIDEO OUT -- Connection jack for sending the VCR signal to another source.

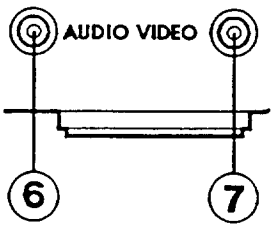
VIDEO IN -- Connection jack that receives the video signal from a video camera, camcorder or other source.

3. **ANT OUT** -- Connect hookup cable supplied with this VCR from this jack to Antenna In on your TV set or other unit.

4. **ANT IN** -- Connect your existing antenna or CATV cable to this jack.

5. **Ch 3-4** -- VCR output channel switch. Set this switch to send the VCR signal to your TV set. Use channel 3; if 3 does not work use channel 4. The TV will receive the signal from your VCR over this channel. Your TV set's channel and this VCR switch must both be set to the same number; either 3 or 4.

VCR Front Panel Alternate Audio/Video Connection Jacks

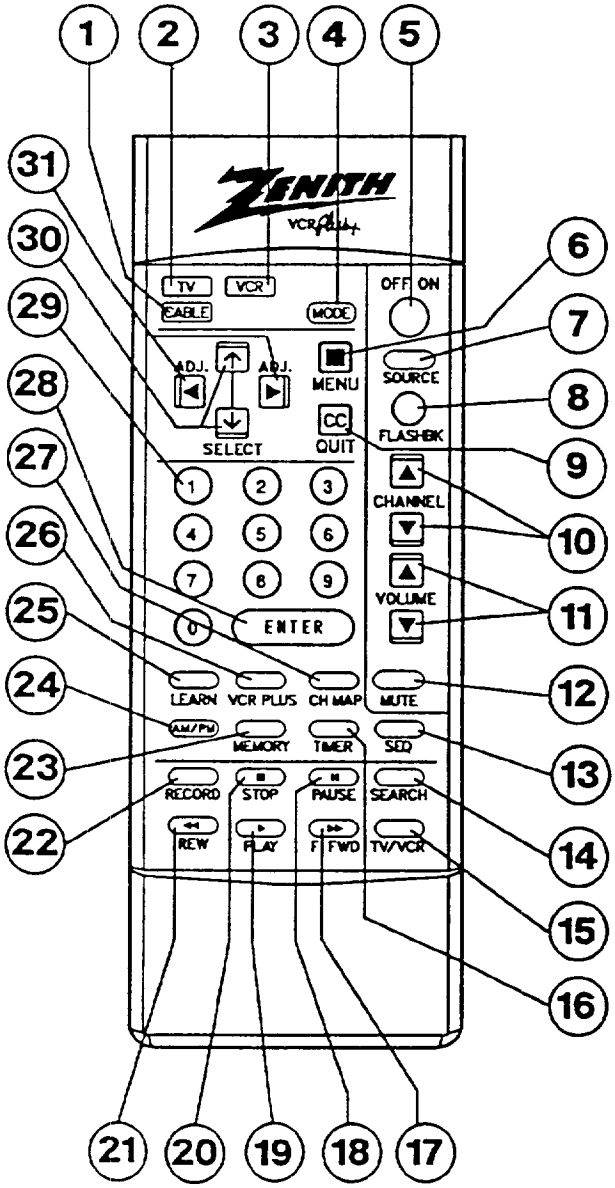


6. **AUDIO** -- Alternate front audio connection jack that receives the audio signal of a video recorder, camcorder or other source.

7. **VIDEO** -- Alternate front video connection jack that receives the video signal of a video recorder, camcorder or other source.

Remote Control

Control Keys on the Zenith MBR3429 Multi-Brand Remote Control



Your Zenith MBR3429 remote control operates your VCR by means of an Infra-Red (IR) Signal. It must be aimed at the VCR to function. While controlling the VCR, the VCR LED (Light Emitting Diode) will light each time a key is pressed.

Operate Other Brand of TVs and Cable Boxes with the MBR3429Remote

This remote can be taught to operate other Infra-Red (IR) controlled TVs and Cable Boxes. Switching between **TV, VCR** and **CABLE** with the remote control, will allow you to operate each unit individually. Some of the advanced features on your TV cannot be accessed with the MBR3429. Use the remote control provided with your TV for these advanced features. See the multi-brand codes listed on page 3-3.

1. **CABLE** -- Will light momentarily when mode is switched to operate cable box or when you press a key on the remote while in the Cable mode.

2. **TV** -- Will light momentarily when mode is switched to operate TV or when you press a key on the remote while in the TV mode.

3. **VCR** -- Will light momentarily when mode is switched to operate VCR or when you press a key on the remote while in the VCR mode.

4. **MODE** -- Press to switch control between TV, VCR and CABLE.

5. **OFF/ON** -- Turns VCR, TV or cable box off or on when in that particular mode.

6. **MENU** -- Press (while in VCR mode) to place the VCR Main Menu (VCR Features) on the TV screen.

7. **SOURCE** -- A function key for your TV, refer to TV operating guide.

8. **FLASHBK** -- When playing a tape, press to change image on TV screen to program being received by VCR tuner.

9. **QUIT** -- Press to exit main menus or to access Closed Captions available on some Zenith TVs.

10. **CHANNEL** -- Press Up arrow to go to next higher channel, press Down arrow to go to next lower channel.

11. **VOLUME** -- For Zenith TVs press Up arrow to increase volume level, press Down arrow to decrease volume.

Remote Control

12. **MUTE** -- For a Zenith TV or other brand you have programmed the remote to operate, press to turn the sound coming from your TV off, press again to restore the sound.

13. **SEQ** -- Some Zenith TVs have audio circuits that will be operated with this key.

14. **SEARCH** -- Use to advance or rewind a recorded tape to an indexed position.

15. **TV/VCR** -- A change key. Press to change between TV and VCR tuners to show broadcast programs on the TV screen.

16. **TIMER** -- Press when all program recording information has been entered. This will turn off the VCR until the program time arrives. (After the program has been recorded, press again to release VCR from Timer Mode.) **Note: Once the VCR is in the Timer Mode the TIMER key must be pressed to release the VCR from Timer Mode.**

17. **F FWD** -- Press to advance tape.

18. **PAUSE** -- Press to momentarily cease VCR record functions or to obtain a still picture while playing a tape.

19. **PLAY** -- Press to begin playing a tape.

20. **STOP** -- Press to stop playing or recording a tape.

21. **REW** -- Press to rewind tape.

22. **RECORD** -- Press and hold down until **REC CH** and the channel number you are recording appear in the VCR message center to start recording on a tape.

23. **MEMORY** -- Use with the tape counter to access locations on recorded tapes.

24. **AM/PM** -- Use to enter AM or PM where required.

25. **LEARN** -- Other product's codes can be learned by this remote control; use the numbered buttons and this key to enter the information necessary to program the MBR3429 remote to operate your cable box and TV set.

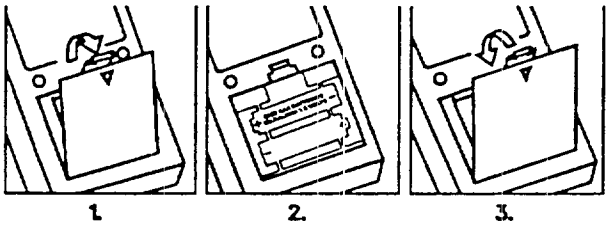
26. **VCR PLUS** -- Press to display the VCR Plus Code information on the TV screen.

27. **CH MAP** -- Press to begin Channel Mapping procedure or to review Channel Mapped data.

28. **ENTER** -- Press to set entered information.

29. **Numbers 0** through **9** -- Use these keys to choose information where applicable. These keys are also used for direct channel access.

Remote Control Battery Compartment



30. **SELECT** -- Use this key to choose information in the menus and sub-menus, where required.

31. **ADJ** -- Press to choose information where applicable; also used to manually adjust the tracking.

1. Open battery compartment on the back of the remote control by using your fingernail to squeeze the tab lock open.

2. Lift compartment door out and install batteries.

Install two (2) high quality new alkaline AAA size batteries in the VCR remote control.

Note the positive and negative positions for placing the batteries in the remote control. Once fresh batteries are installed into the remote control it is ready for use.

3. Replace compartment door on remote control.

Notes:

Be careful not to place heavy objects on top of the remote control buttons. Prolonged accidental operation of the remote control will shorten battery life.

If you do not use the remote control for a month or more, remove the batteries. Battery leakage can cause damage to the remote control.

Zenith is not responsible for damage caused by such battery leakage.

MBR3429 Remote Control Multi-Brand Codes

Introduction

Before using your new remote control, it must be programmed to recognize the brands of equipment it will be used to operate. If you are using a Zenith TV, Zenith VHS/VCR or a Zenith cable-TV decoder, it has already been programmed for you. Otherwise, follow the steps below.

NOTE: This remote control can only be used to operate one VCR, one TV and one cable-TV decoder at a time. If you program the remote control to operate a TV that is not a Zenith, it will no longer operate your Zenith TV.

1. Find the code that corresponds to each brand and type of equipment you are going to operate. Refer to Tables 1, and 2.

   For example, if you were programming the remote for use with a Zenith TV, you would look up "Zenith" in "Table 1.", and find code "101."

   Write the brand codes for your equipment on the following lines. **Keep this operating guide for future reference.**

   TV CODE: CABLE CODE:

2. Press **MODE** repeatedly to select the desired TV, VCR or CABLE operating mode for the remote.
3. Press **LEARN** for about 5 seconds until the MODE indicator lights for the selected TV, VCR or CABLE mode of operation.
4. Enter the proper brand code number determined in Step 1.
5. Press **LEARN**. All three mode indicators should light briefly, then turn off to indicate the brand code has been programmed.
6. If all three mode indicators fail to light briefly, an error has occurred. Repeat Steps 2-5 to try again.
7. Repeat Steps 2 - 5 to program the remote for the other equipment you are using.

NOTE: CABLE mode can be programmed to operate a second TV or second VCR, if desired.

When batteries are removed: It will be necessary to reprogram the proper VCR and cable-TV decoder codes.

Table 1 Remote Control TV Codes by Brand

Admiral	116	Magnavox	112	Samsung	134
Admiral	121	Magnavox	113	Sanyo	108
Akai	104	Magnavox	119	Sanyo	109
Amark	103	Magnavox	127	Sanyo	118
AOC	104	Magnavox	128	Scott	119
Bell & Howell	121	Majestic	121	Sears	103
Centurion	119	Marantz	104	Sears	108
Coronado	103	Marantz	120	Sears	109
Curtes Mathes	116	Memorex	121	Sears	110
Curtis Mathes	119	MGA/Mitsubishi	104	Sears	111
Curtis Mathes	121	MGA/Mitsubishi	119	Sears	118
Daytron	119	MGA/Mitsubishi	120	Sears	134
Emerson	103	MGA/Mitsubishi	130	Sharp	103
Emerson	104	Montgomery Ward	103	Sharp	105
Emerson	123	Montgomery Ward	104	Sharp	122
Emerson	124	Montgomery Ward	105	Sharp	133
Emerson	131	Montgomery Ward	113	Sharp	137
Emerson	136	Montgomery Ward	114	Sony	115
Fisher	109	Montgomery Ward	119	Sylvania	112
Fisher	118	Montgomery Ward	121	Sylvania	113
General Electric	106	Montgomery Ward	130	Sylvania	117
General Electric	107	NEC	104	Sylvania	119
General Electric	114	NEC	119	Sylvania	127
General Electric	116	Panasonic	106	Sylvania	128
Goldstar	103	Panasonic	107	Tatung	106
Goldstar	104	Philco	103	Teknika	103
Goldstar	119	Philco	104	Teknika	112
Hitachi	102	Philco	113	Teknika	121
Hitachi	103	Philips	112	Teknika	124
Hitachi	129	Philips	113	Telerent	103
JVC	125	Pioneer	135	Telerent	121
JVC	132	Portland	103	Toshiba	110
J.C. Penney	104	Quasar	106	Toshiba	111
J.C. Penney	110	Quasar	107	Toshiba	134
J.C. Penney	114	Realistic	105	Yorx	119
J.C. Penney	119	Realistic	123	Zenith	101
KMC	103	Realistic	124		
KTV	103	RCA	104		
KTV	104	RCA	116		
Lodgenet	121	RCA	126		
Logik	121	Sampo	119		
LXI	133	Samsung	103		
LXI	137	Samsung	119		
Magnavox	103				

Table 2 Remote Control Cable Decoder Codes by Brand

Drake Satellite	312	Macom	314	(Panasonic)	313
Drake Satellite	330	Macom	321	Standard Components	335
Gemini	305	Macom Satellite	322	STS Satellite	324
Gemini	331	Magnavox	334	Telecaption 4000	325
General Instrument	305	NSC	335	Tocom	317
General Instrument	306	Oak	311	Tocom VIP	318
Hamlin	302	Oak	332	Toshiba	322
Hamlin	303	Panasonic	313	Toshiba Satellite	319
Jerrold	304	Panasonic	320	Zenith	301
Jerrold	307	Paragon (Zenith)	333	Zenith	322
Jerrold	308	Pioneer	315	Zenith AV3000	327
Jerrold	309	Regency	329	Zenith Satellite	312
Jerrold	310	Samsung	335	Zenith Satellite	330
Kale Vision	335	Scientific Atlanta	316	Zenith Satellite	328
Cable Decoder Brand Name	Code	Scientific Atlanta	323	Zenith Laser Disk	326
		Scientific Atlanta Sprucer	336		

Installation

Unpack The VCR and All Accessories

Disconnect antenna from your TV or other units. Position VCR in desired location, away from any interfering wiring. Turn the VCR around so you are looking at the back side and locate the connections panel. **Note: It is important to place the VCR where you plan on using it. After setting the Clock and completing the Channel Search, if you disconnect the VCR power cord some of that information will be erased. (This will also occur if there is a power failure.)**

Antenna Connections

Connect the antenna to the VCR and the VCR to the TV. If you have CATV (Cable TV) use the connections detailed on page 4-3.

Notes:

If you are replacing an existing VCR, disconnect your old VCR and connect the new VCR in the same way.

If this is your first VCR installation refer to Connections 4-2 for hookup procedures.

For basic first-time connections, proceed as shown in Diagram A.

Diagram A is designed to help you connect your VCR to your antenna and TV set.

Step 1.

Connect your antenna cable to your VCR using the VCR **ANT IN** jack located on the back panel of the VCR as shown. (If this is not how your antenna cable looks you may need additional adapters to complete these connections. Refer to page 4-2 for connecting your VCR).

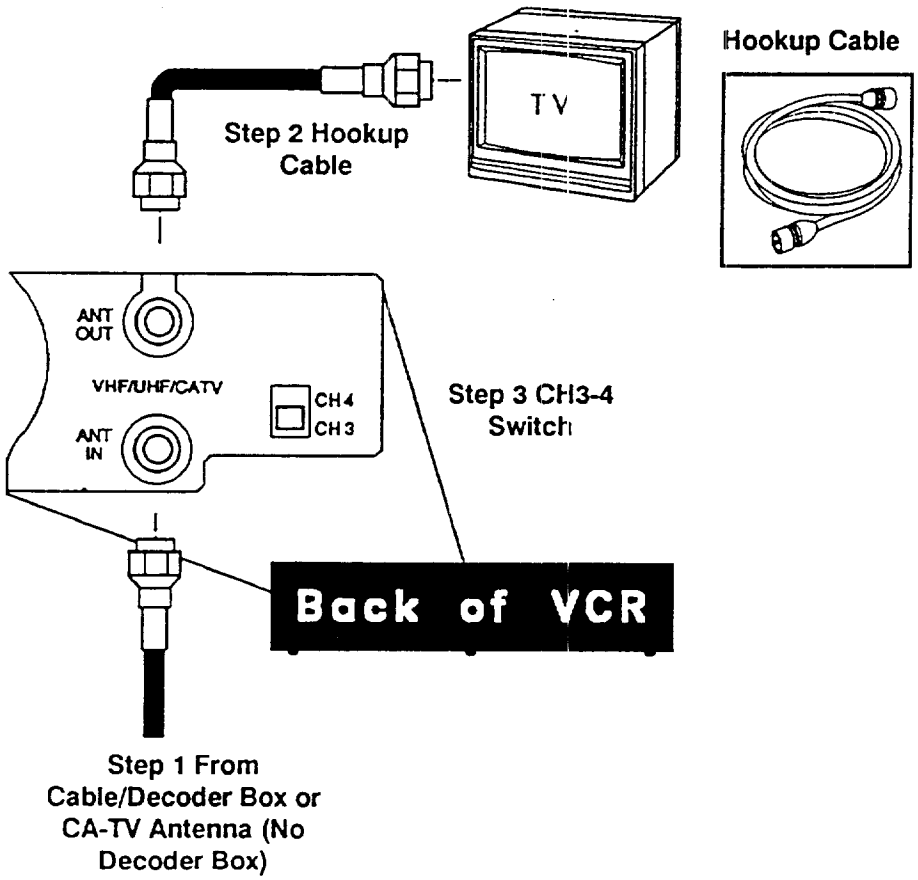
Step 2.

Connect the hookup cable supplied with your VCR to the VCR **ANT OUT** jack. Connect the other end to the **ANT IN** jack on the TV set.

Step 3.

Slide the CH3-4 switch so it is in the **CH 3** position; this sends the VCR signal to the TV set over channel 3. (If **CH 3** does not work slide the switch to **CH 4**.)

Diagram A. VCR Back Panel Cable Connections



Connections

These illustrations are designed to help you connect your VCR to your antenna and TV set.

Step 1.

Identify your particular antenna type. Connect your antenna to your VCR using the VCR **ANT IN** jack. *

Step 2.

Connect the cable supplied with your VCR to the VCR **ANT OUT** jack. Connect the other end to the **ANT IN** jack on the TV set. *

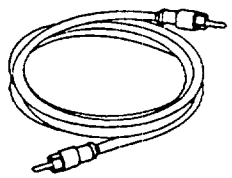
Step 3.

Your VCR is equipped with Audio/Video Input and Output jacks on the back panel. If you have Audio/Video input and output jacks on your TV set or Audio input/output jacks on your stereo, you may choose to make these connections that will improve the Audio/Video output performance of your VCR. *

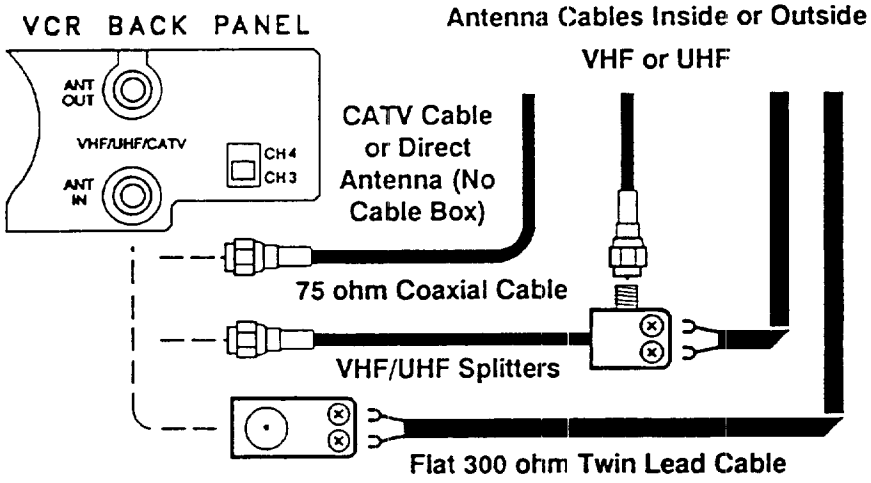
*** Note: You may need additional adapter to make the connections shown.**

You will need a "Y" Adapter to make the connections shown.

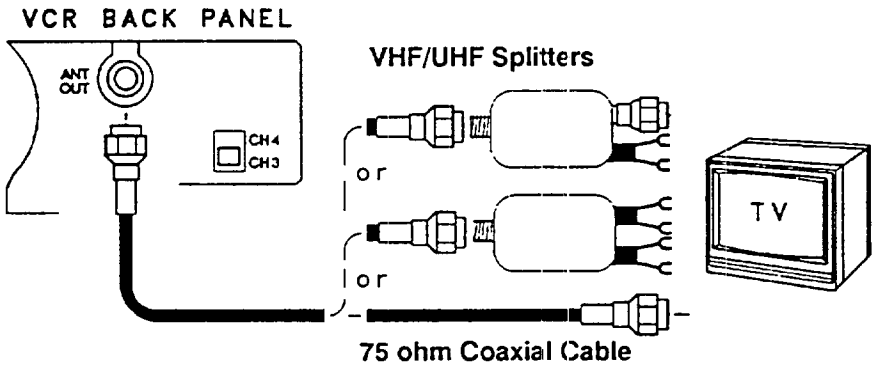
75-Ohm Video Cable



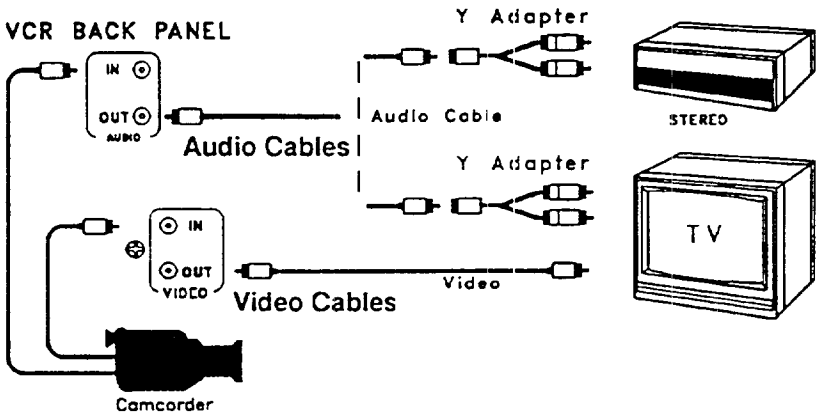
Step 1 Antenna To VCR Connections



Step 2 VCR To TV Connections



Step 3 Audio/Video Connections



To select these options use the Tuning Features submenu to bring up 4-Source Select. Choose Aux to use the Audio/Video connection jacks

CATV (Cable TV) Converter Box Connections

The connection illustrations shown in Figures 1 and 2 show the common methods of connecting your VCR to cable service and your TV set.

Figure 1. (Not recommended for VCR Plus)

If your CATV cable connects directly to your TV (with or without a converter or descrambler box) you may use the connection method shown. You will not be able to record an unscrambled (Pay TV) program with this connection.

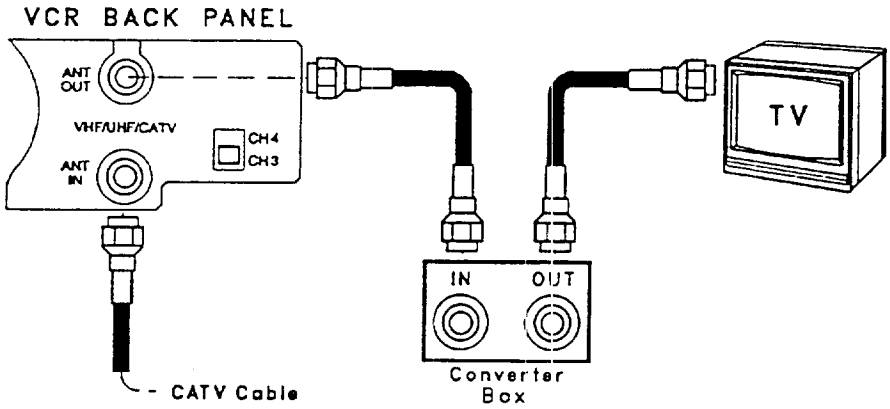
Figure 2. (Recommended for VCR Plus) Using this method you should be able to record Pay TV programs with your VCR. You will only be able to record and view one channel at-a-time with this connection.

Note:

For special cable connections please refer to your cable company's service department or a qualified TV Technician.

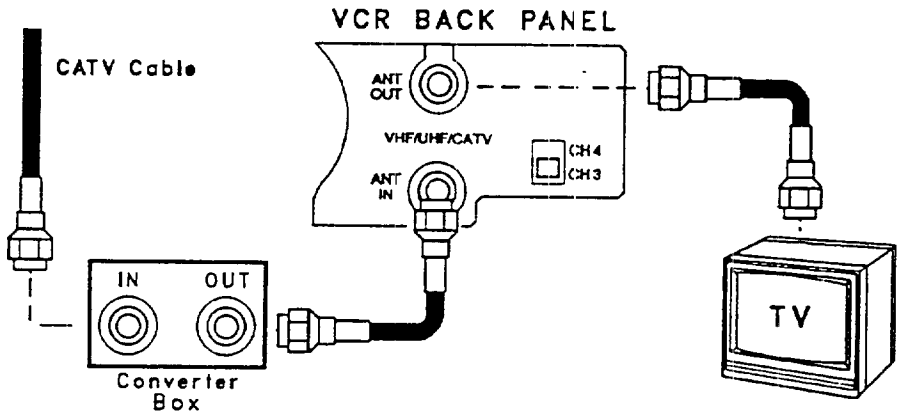
You may need additional adapters to make the connections shown.

Figure 1 CATV "Converter After" VCR Connections



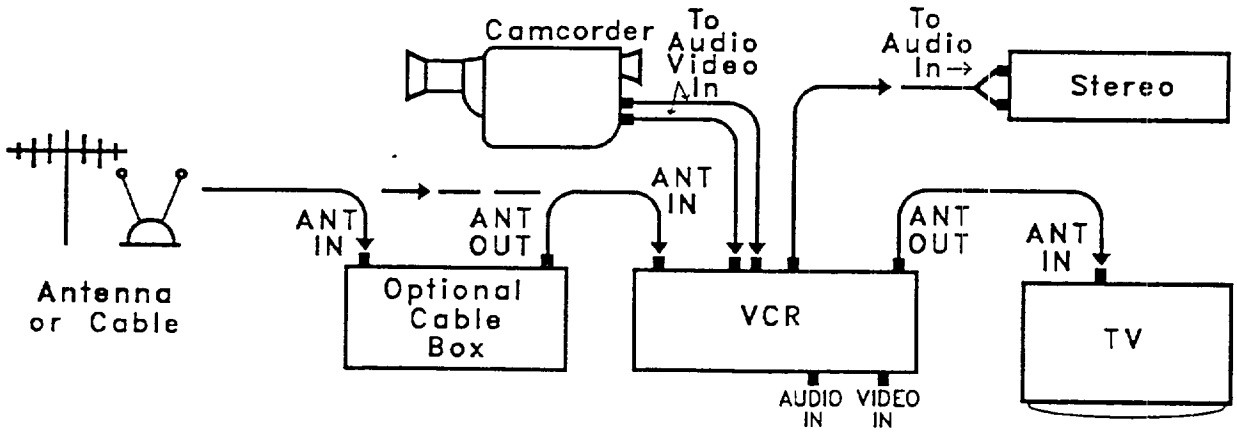
Note: Select all channels for viewing/recording at the cable box.

Figure 2 Cable TV (Pay TV) To Converter Box To VCR To TV Set Connections



Note: Select all channels for viewing/recording at the cable box.

System Diagram



VCR Menu Settings

On-Screen Menus

This VCR is controlled by an on-screen menu programming system.

There are 5 VCR Feature menus which you choose using the remote control. These menus are then shown on your TV screen. Each menu and sub-menu asks you to either make a choice or enter information. Some on-screen menus have only three screens, like the CLOCK SET menu, others require more information that has to be entered or chosen on several screens.

Remote Control MENU Key (Access to your Menu System)

The **MENU** key on your remote control is the access to the on-screen menu system.

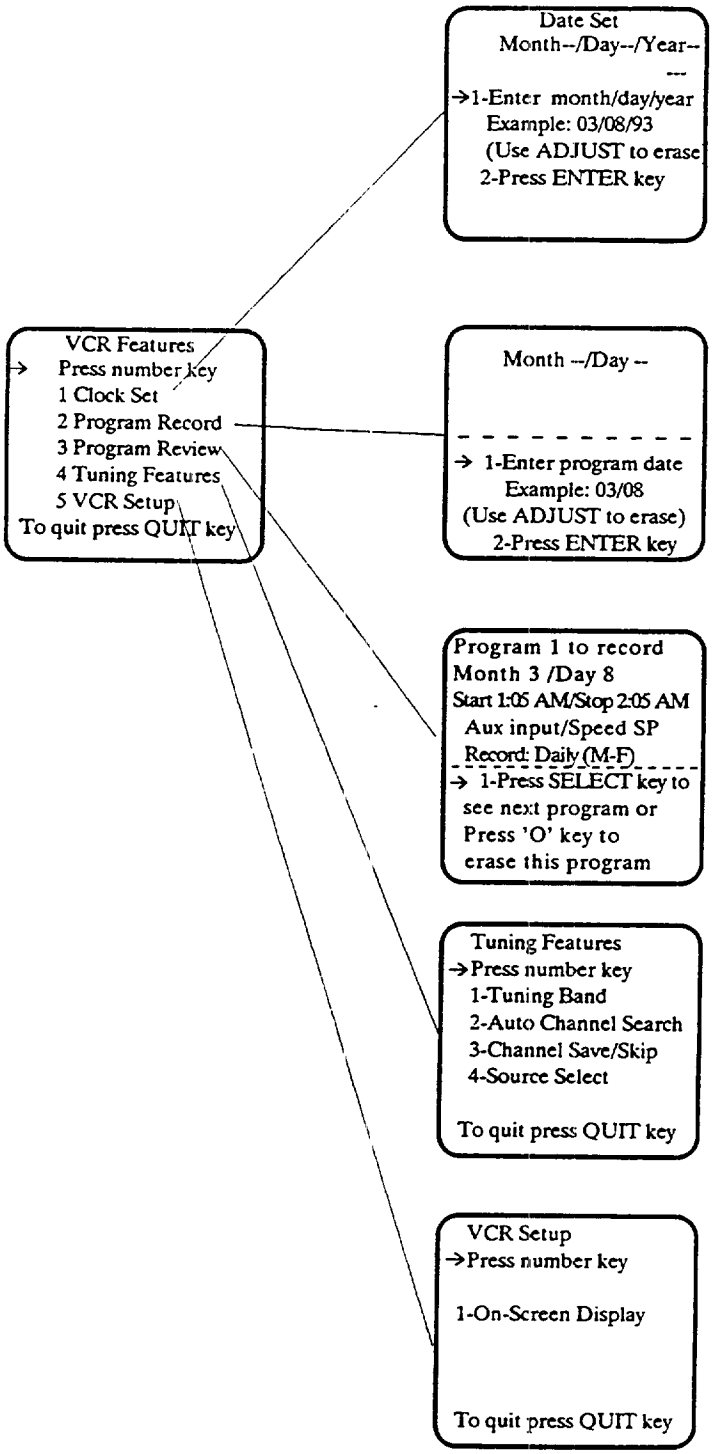
Turn on your TV set.

Turn on the VCR; switch the remote control to VCR mode. (When you press any key the VCR LED will light.) Tune the TV to channel 3. Make sure the switch on the back of the VCR is set to Ch-3. **Note: If you chose Channel 4 to send your VCR signals to the TV set then tune the TV to Channel 4. Whichever decision you made, the Channel 3-4 Switch on the back of the VCR must be set and the TV tuned to the same channel.**

Press **MENU** on the remote control; the Main Menu appears on the TV Screen. These are the VCR Features. Once the VCR Features are set up they control the VCR. To choose a feature press the number key on the remote control that corresponds to the number of the menu item. For example, press 1 to bring up the CLOCK SET menu, press 2 to bring up PROGRAM RECORD etc.

For the menu system to be accurately functioning the clock/date **must** be set correctly.
Note: If you program the VCR with information and then disconnect the power cord from your wall socket some of that information will be lost. If a power failure occurs the result is the same as if you disconnected the power cord.

Main On-Screen Menu (VCR Features)



VCR Menu Settings

Set the Current Time

Set the clock on the front of the VCR in the message center. Use the VCR remote control to place the on-screen display on your TV screen.

1. Press **MENU** on the remote control. The Main Menu (VCR Features) appears on your TV screen.

2. Press **1** on the remote control.

This will bring you to sub-menu DATE SET.

Set the Month

The first two numbers would be the month. Enter the month by number; use the numbered keys on the remote control.

For example April, the 4th month of the year, would be entered as 04, December the 12th month of the year would be entered as 12. If you make an obvious mistake the on-screen display will show a ? where the correct number should be. Press **ADJ** to erase errors.

Programming Tip: If you are having difficulties press **QUIT**, then re-enter the Main Menu by pressing **MENU** on the remote control to start over.

Set the Date

The next two numbers would be the date. For example 03 would be the 3rd day of November. The last two numbers are the year. For example, 1994 would be entered as 94.

Set the Time

Enter the hours, then the minutes, then press **AM/PM** on the remote control to choose AM or PM. For example 9:35 in the morning would be entered as 09 35 AM.

Receiving VHF/UHF TV Programs or Cable TV Service

Select Channel 3 on your TV to receive televised programs from the VCR Tuner.

Press **MENU** on the remote control to bring up the Main Menu (VCR Features) on the TV screen.

Press 4 to choose TUNING FEATURES.

Press 1- Tuning Band. The on-screen menu for TUNING BAND appears.

Press **ADJ** to choose TV if you only receive UHF/VHF CHANNELS. Choose CATV if you have cable service.

Press **SELECT** to move to sub-menu AUTO CHANNEL SEARCH.

VCR Tuner Channel Search

Press **ADJ** to begin the VCR automatic channel search program. The VCR searches for the available channels you receive in your local broadcast area. When the search program is complete the channels that were found will be indicated as CHANNELS FOUND and be followed by the number of channels that were found. For example, CHANNELS FOUND 14.

The VCR has automatically programmed itself to receive those channels. Press **QUIT** on the remote control; the first channel's program will appear on your TV screen.

Note: Make sure you have chosen ON from the VCR On-Screen Display sub-menu so that the channel number will appear momentarily in the upper right hand corner of the TV screen each time you change channels.

As you press CHANNEL Up or Down each channel the VCR has found will be shown on the TV screen and the channel number will also be shown in the VCR message center.

Some channels may be too weak to send a picture (adequate viewing signal) to the VCR.

To eliminate these channels in the channel memory sequence that the VCR has tuned, write down the numbers of these "weak" channels and proceed as follows.

Channel Save/Skip

1. Press **MENU** on the remote control.

2. Choose main menu item 4-TUNING FEATURES.

3. Choose CHANNEL SAVE/SKIP. Each channel the VCR tuner has found will come up in numerical sequence. As you press CHANNEL up choose SKIP to delete any weaker channels as desired. Choose SAVE to keep the channels with an adequate signal. Repeat this procedure to eliminate any other weak channels. For example, if Channel 27 comes in but is too weak for viewing, press **ADJ** so the word SKIP appears next to the weak channel's number. Press **QUIT** on the remote control when finished with the Channel SAVE/SKIP procedure. Now when you press the CHANNEL Up/Down keys only strong signal channels will be tuned in and weak ones skipped using the VCR tuner. Tune channels with a cable box at the cable box.

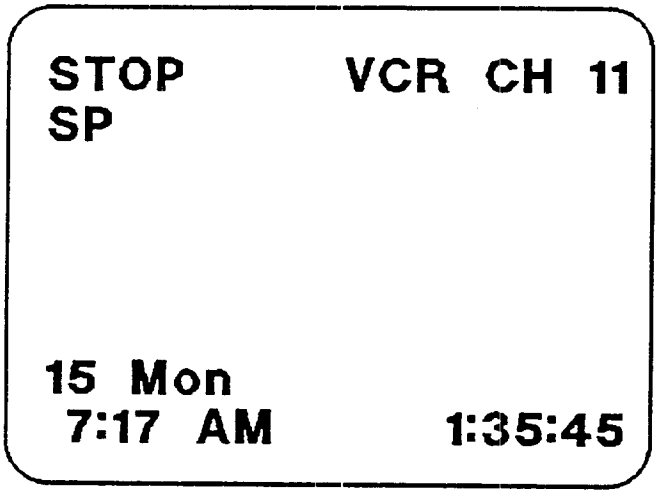
Choosing Channels

The remote control must be set to the VCR mode to choose channels on the VCR. You can choose a channel by using either the CHANNEL Up/Down buttons on the VCR or the remote control, or by using the numbered keys on the remote control to choose the channel number directly (32 for example) and pressing **ENTER** to switch the VCR Tuner to receive that channel. The channel number will be shown in the upper right hand corner of the VCR on-screen display which will appear momentarily on your TV screen each time you change channels or initiate a VCR operation.

VCR Function On-Screen Display

The TV 4-corner VCR status on-screen display shows the channel you chose using the VCR tuner, and also the function the VCR is performing, PLAY, RECORD, STOP, etc., will be displayed on the TV screen for a short time.

Typical 4-Corner VCR Status On-Screen Display



STOP-- Indicates the VCR is in the Stop Mode.

SP -- Indicates tape speed is set for Standard Play.

VCR CH 11 -- Indicates VCR mode is active and the VCR Tuner is set to Channel 11.

15 Mon -- The date the VCR is set at.

7:17 AM -- The time the VCR is set at.

1:35:45 -- Tape position indicator is at 1 hour, 35 minutes and 45 seconds.

Power Failures

Occasionally a power failure occurs. The result is that all the information programmed into the VCR has to be re-entered. If you were away when this occurred and notice that the clock date and time are missing and **SET CLOCK** appears, then there was an interruption in electrical service to your VCR.

Error Messages

As you use the menu system, if a problem or conflict occurs the menu system alerts you with an error message on the TV screen, like "No Cassette." For example, if you entered all the information for a timed recording and pressed the TIMER key to set the VCR into TIMER Mode and no tape was loaded into the tape loading compartment, then that error message would appear on your TV screen.

VCR Message Center

Message Center Displays

This display panel enables you to understand what function the VCR is performing at any time. Designed to be self-explanatory, these messages are displayed automatically.

Message Center Display	Video Recorder Operation
Tuner Messages	
CHANNEL SET	Indicates video recorder has completed auto channel search.
HELLO	Appears when you turn on the VCR.
SAVED 3	Indicates channel 3 is saved in Channel Scan.
SKIPPED 7	Indicates channel 7 is skipped in Channel Scan.
CHANNEL ___	Indicates VCR tuner is tuned to a specific channel.
AUX	Indicates video recorder is tuned to receive both video and audio signals from the video in and audio in jacks.
Setup Messages	
SET CLOCK	Indicates clock needs to be set. **NOTE:** This message appears if power to the video recorder is interrupted.
Operating Indicators	
VCR	Indicates the video recorder is in the VCR Tuner mode or a tape is playing in the VCR.
	Indicates a VHS cassette is loaded in the video recorder.

The messages in the display may be duplications of information shown on the TV screen. Some changes will be visible on both the TV screen and VCR Message Center.

Message Center Display	Video Recorder Operation
Record Messages	
NO CASSETTE	Appears when **TIMER** is pressed and there is no VHS cassette in the video recorder.
NO TAPE TAB	Appears when **REC ITR** is pressed and the VHS cassette inserted in the video recorder has no safety tab.

VCR Message Center

Message Center Displays (Continued)

Message Center Display	Video Recorder Operation
Record Messages (Continued)	
REC CH __	Appears when the video recorder is recording.
RECORD 0:00	Appears when **REC ITR** is pressed, prompting you to select the desired amount of Instant Recording Time with successive presses of **REC ITR**.
TAPING DONE	Appears when the VCR has finished all recording assignments. If necessary, press **TIMER** to release VCR from Timer mode.
TIMER SET	Appears when Timer is set and power is off.
INDEX MARK	Appears when the video recorder is placing an index mark at the beginning of a recording.

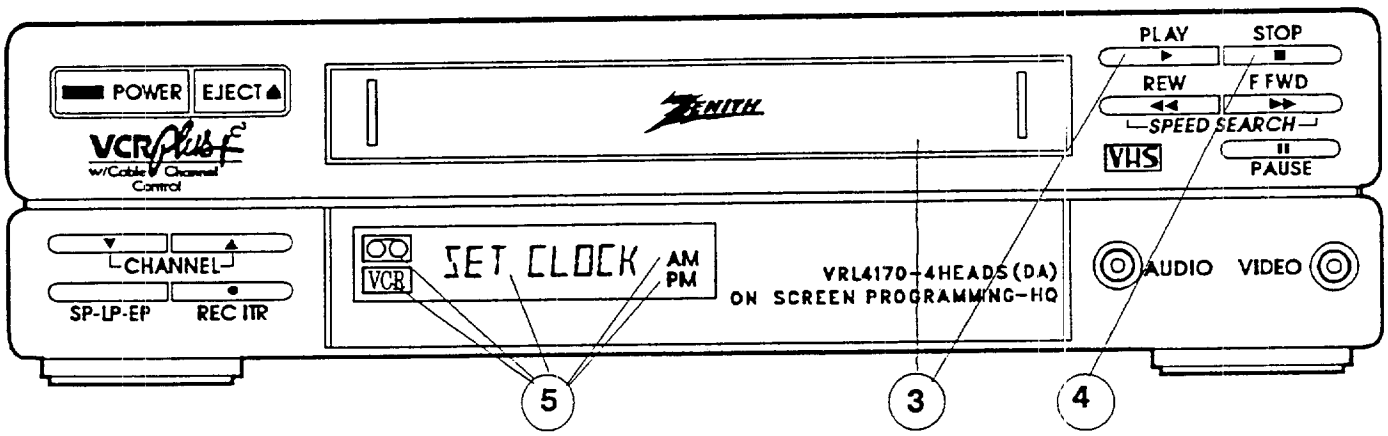
Message Center Display	Video Recorder Operation
Playback Messages	
PLAY	Indicates video recorder is playing a VHS cassette.
PLAY X2	Indicates video recorder is playing a tape at double normal playback speed with picture but without sound.
AUTO TRACK	Indicates the video recorder is automatically adjusting the tracking control.
STOP	Indicates the video recorder is in the Stop mode.
F FWD	Indicates the video recorder is in the Fast Forward mode (without picture or sound).

VCR Message Center

Message Center Displays (Continued)

Message Center Display	Video Recorder Operation
Playback Messages (Continued)	
REW	Indicates the video recorder is in the Rewind mode without picture or sound.
FWD SEARCH	Indicates the video recorder is in the Forward Visual Search mode.
REV SEARCH	Indicates the video recorder is in the Reverse Visual Search mode.
BLNK SEARCH	Indicates the video recorder is in the Blank Search mode.
STILL	Indicates the video recorder is in the Pause mode.
SLOW	Indicates video recorder is playing a cassette in slow motion.
INDEX _	Indicates the video recorder is in the Index Search mode.
Tape Transport Messages	
EJECT	Indicates VCR is ejecting a tape.
ERR	Indicates the VCR has detected an error in accepting a cassette. Take the VCR to a Zenith approved service center.

Playback



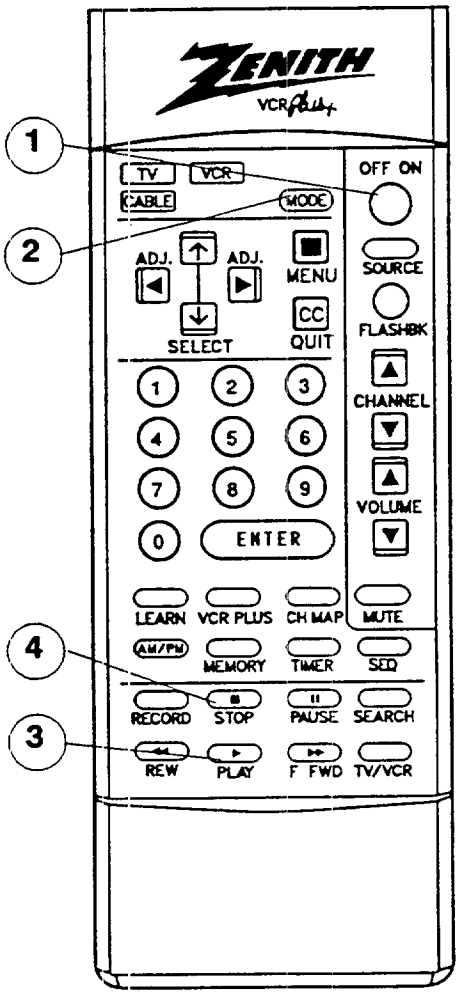
1. Turn the TV on and tune it to channel 3.* (If you programmed the remote to operate your TV, press **3**, then **ENTER**.)
2. Switch the remote control to VCR mode.
3. Insert a VHS cassette tape into the VCR loading compartment; this turns on the power and the tape will automatically begin playing if the cassette safety tab has been removed, or press **PLAY** on the VCR or the remote control to start playing the tape.
4. To stop playing the tape, press **STOP** on the VCR or the remote control. Press **EJECT** on the VCR to eject the tape.
5. Note: The symbols shown on this illustration in the VCR message center will only appear while the VCR is performing those functions. However, the clock will remain on while power is supplied to the VCR.

   Automatic Reset-The counter resets when you insert a tape and when a tape is rewound to its beginning.

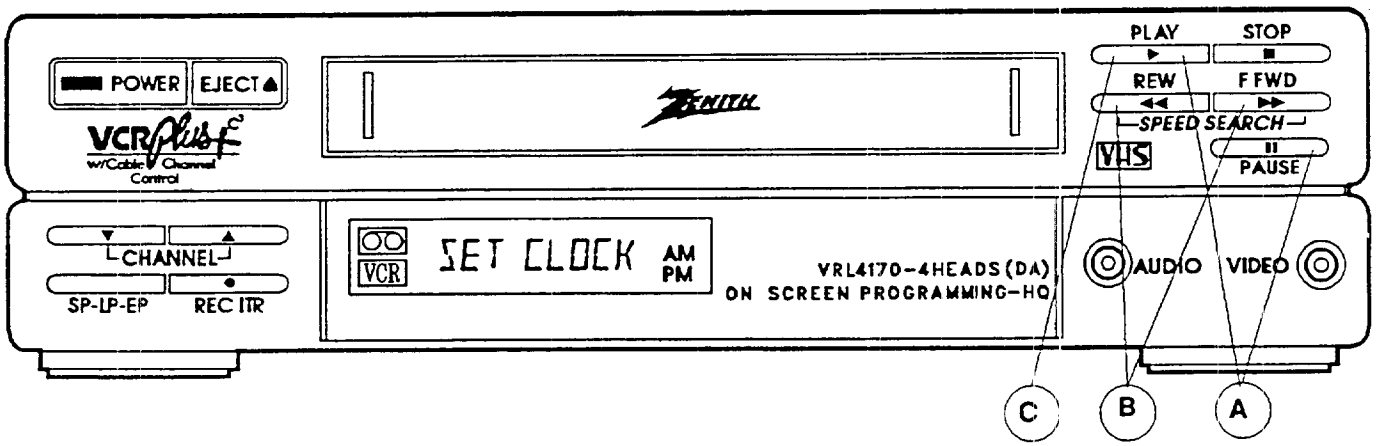
   Display Elapsed Time- Press **ENTER** on the remote control; press it again to leave the tape counter display on the TV screen.

   To Remove Counter Display-Press **ENTER** on the remote control.

   * Or 4, the same channel that you set with the **CH 3-4** switch on the back of the VCR to send the VCR signal to the TV set.



Additional Playback Features



A. Still/Slow Motion Video

Press **PAUSE** while playing a tape, follow on-screen instructions. Press **PLAY** to resume tape playing.

B. Tape Rewind/Fast Forward

In the Stop mode, press and release **REW** or **FFWD** to rewind or fast forward the video cassette tape.

Reverse/Forward Search

In the Play mode, press and release **REW** or **FFWD** to search the video tape recording. If you hold down the **REW** or **FFWD** key the VCR will go into Jet Search, faster tape scanning.

C. Press **PLAY** to continue watching the tape.

D. Tracking Adjustment Auto/Manual

Your Zenith VCR automatically adjusts for optimum tracking every time you play a tape. If however, the tape was recorded on a different VCR, streaks may appear. While the tape is playing, press and hold down one of the **ADJ** keys to manually adjust the tracking.

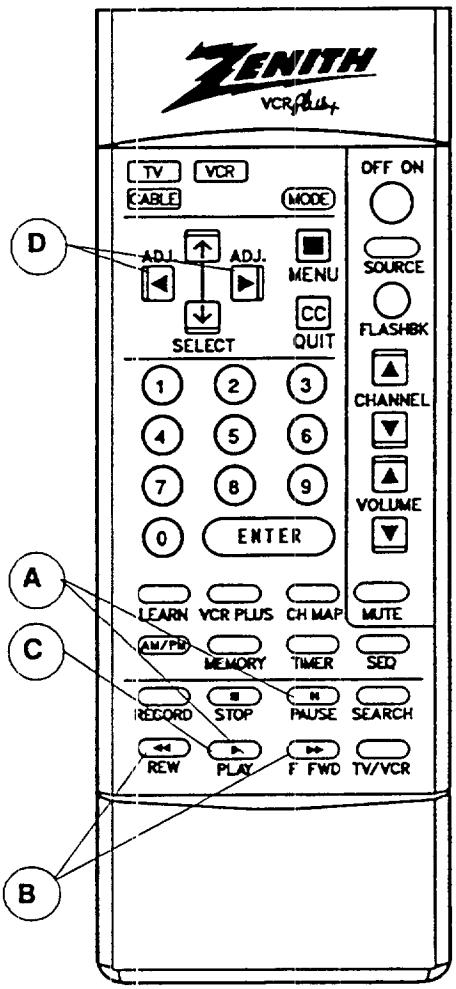
E. Real Time Tape Counter

The real time tape counter shows you the amount of time that has elapsed from the start of the recording, or playback, in actual hours, minutes and seconds. (1:35:28 = 1 hour, 35 minutes and 28 seconds).

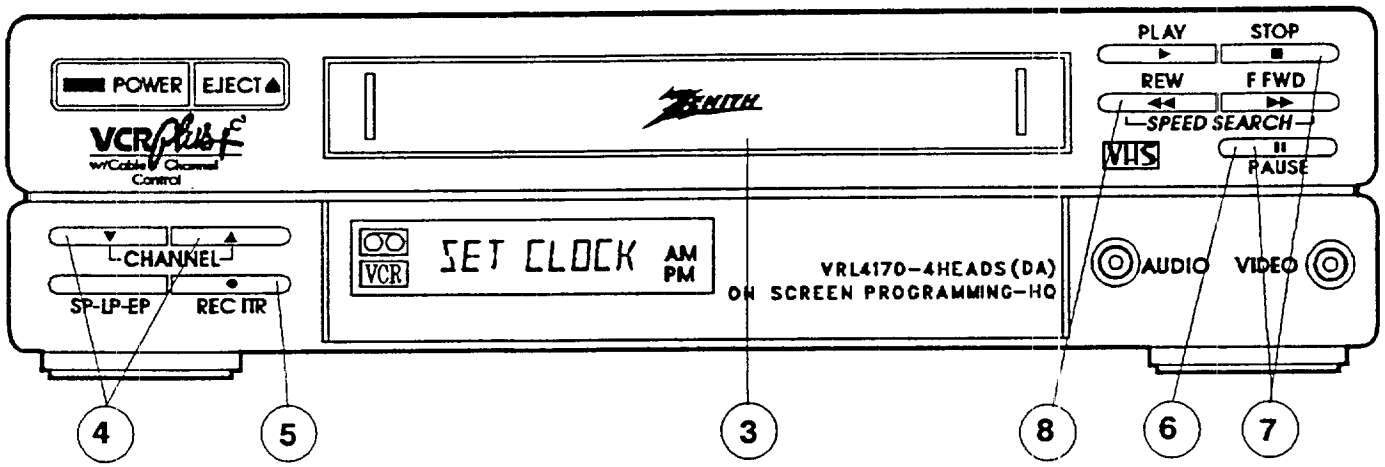
Counter Memory-Press **MEMORY** on the remote control, follow the on-screen instructions.

F. Index Search-(See Additional Operations)

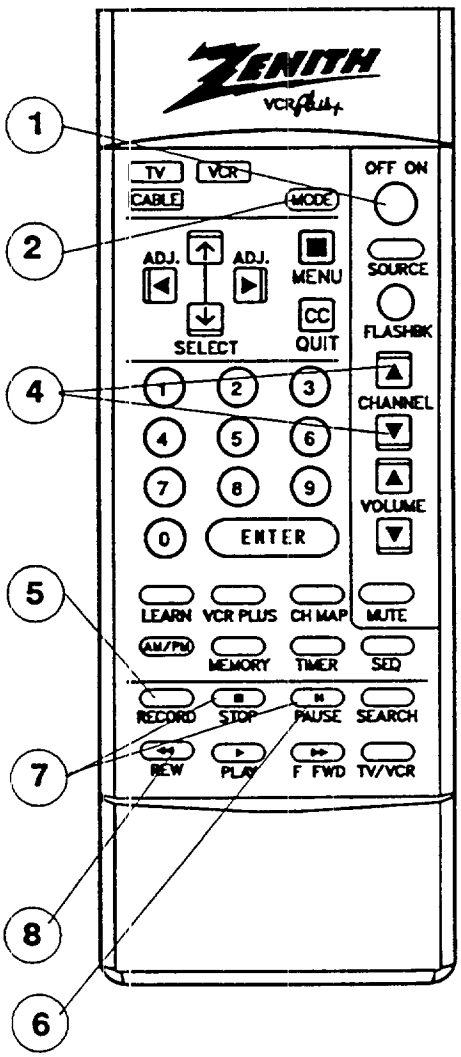
Note: Press **ENTER** two times to leave the tape counter display on the TV screen in each mode; STOP, RECORD, PLAY etc. (Not available in all modes.)



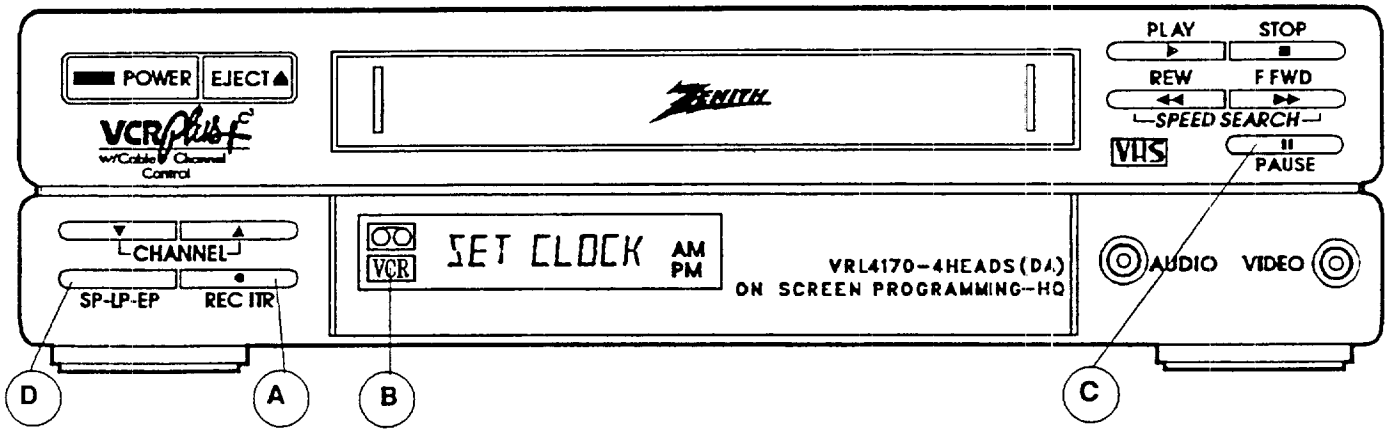
Recording



1. Turn the TV on and tune it to channel 3.* (If you programmed the remote to operate your TV, press **3**, then **ENTER**.) *See Footnote at the bottom of page 6-1.
2. Change the remote control to VCR Mode.
3. Insert a VHS tape into the VCR tape loading compartment; this turns on the power automatically. Make sure the cassette safety tab is intact.
4. Tune the VCR to the channel you wish to record. **Note: For recording CATV (cable) broadcasts the cable box must be on and tuned to the channel you wish to record.** The recording speed will be SP (Standard Play); to select a different speed press **SP/LP/EP** to enter the speed selection sequence. (See Additional Operations for recording speed chart.)
5. Press and hold **REC ITR** on the VCR or **RECORD** on the remote control until **REC CH** and the channel number you are recording, appear in the VCR message center.
6. Press **PAUSE** on the remote control to momentarily cease recording, **REC PAUSE** will appear in the VCR message center, press **PAUSE** again to resume recording.
7. To stop recording, press **PAUSE** on the remote control then **STOP** on the VCR or **STOP** on the remote control. (Pressing **EJECT** on the VCR will eject the tape.)
8. If desired, press **REW** on the VCR or remote control to rewind the tape to the beginning.



Additional Recording Features



A. Recording Length of Time.

Press and hold down **REC ITR** on the VCR or **RECORD** on the remote control until **REC CH** and the channel number you are recording, appear in the VCR message center. The VCR will continue recording until you press **PAUSE** or **STOP**. If you press **STOP** the VCR will turn off. To specify a length of time to record see item A. Instant Timer Recording page 8-1.

B. Recording One TV Program While Watching Another

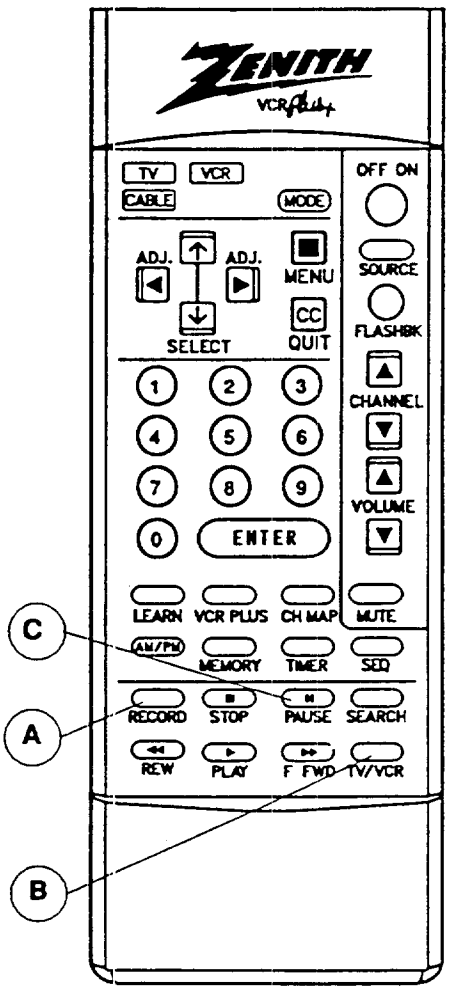
Press **TV/VCR** on the remote control to turn off the VCR indicator in the VCR message center. Then tune the TV to the desired channel. To return to VCR tuning, press **TV/VCR** again the **VCR** indicator will light again.*

C. Edit During Recording

Press **PAUSE** at any time to stop recording momentarily; **REC PAUSE** will appear in the VCR message center. Press **PAUSE** again to resume recording. (Using the Pause mode, while recording, instead of the Stop mode will eliminate video "noise" between recorded segments when the tape is played back.)

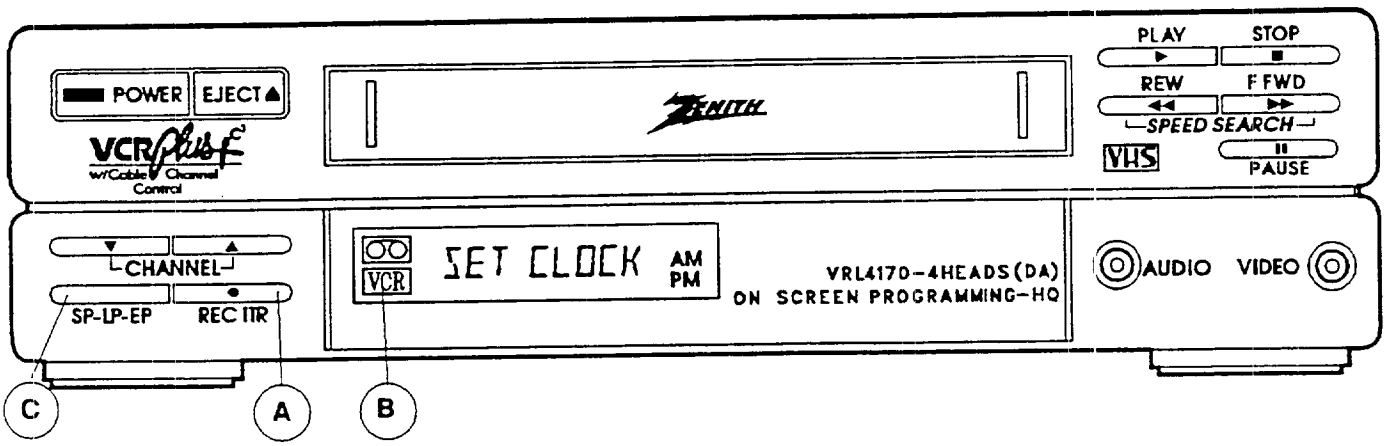
D. Recording Speed

Repeated presses of **SL/LP/EP** will change the recording tape speed either before or during the recording setup process. (See Additional Operations, for Tape Recording Speed Chart.)



*Cable TV companies that supply subscribers with a converter/descrambler box use a wide diversity of antenna, VCR, cable/converter box to TV connections. Please refer to your cable company's service department for their options available for recording/watching the same program.

Instant Timer Recording



A. Instant Timer Recording

Press and hold down **REC ITR** one time until **REC CH** and the channel number you are recording, appear in the VCR message center. Each time you press **REC ITR** thereafter chooses the amount of recording time in 30 minute intervals. Each press extends the recording time 30 minutes. (If you do not press **REC ITR** more than once Record mode will continue until the end of the tape.)

REC ITR Button Recording Time

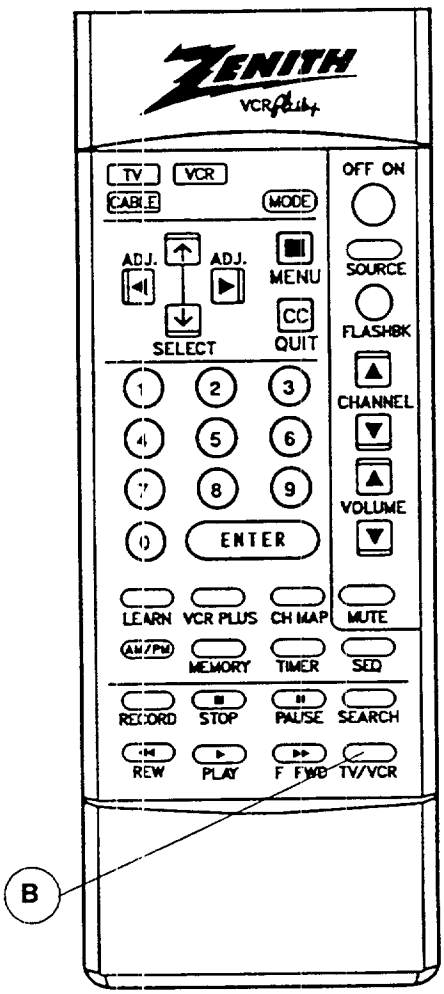
2 Presses 30 Minutes, 3 Presses 1 Hour, 4 Presses 1 Hour 30 Minutes, 5 Presses 2 Hours, 6 Presses 2 Hours 30 Minutes, etc. up to a maximum of 4 hours. The time you choose will be displayed in the VCR clock area and will count down until recording time is over.

B. Recording One TV Program While Watching Another

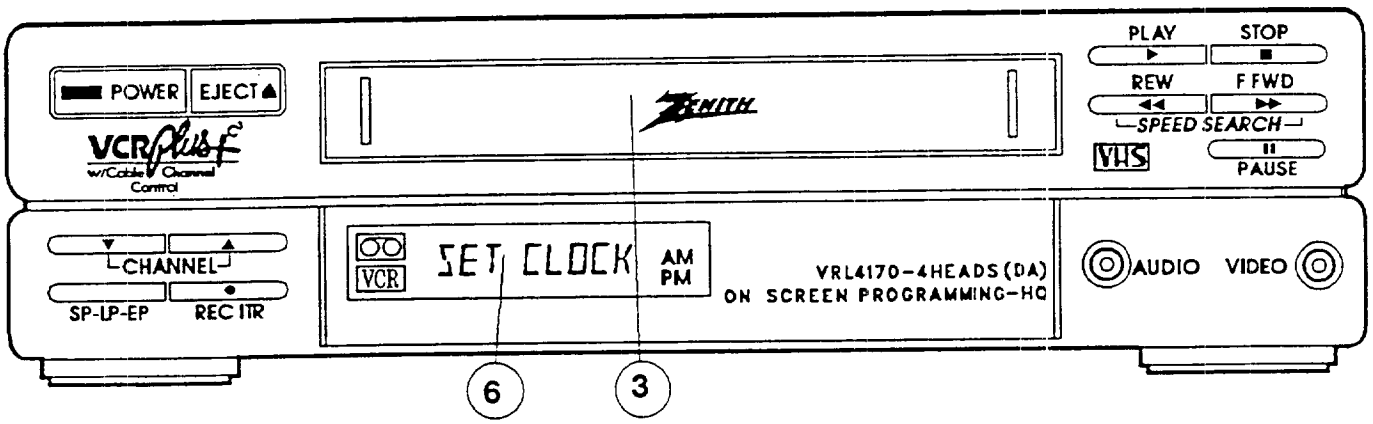
Press **TV/VCR** on the remote control to turn off the VCR indicator in the VCR message center. Then tune the TV to the desired channel. See CATV note page 7-1.

(To return to VCR tuning, press **TV/VCR** again, the VCR indicator in the VCR message center will light again.)

C. Recording Speed Multiple presses of **SP/LP/EP** will change the recording tape speed either before or during the instant recording setup procedure. The selected recording speed will be shown on the TV 4-Corner On-Screen Display. (See Additional Operations, for Tape Recording Speed Chart.)

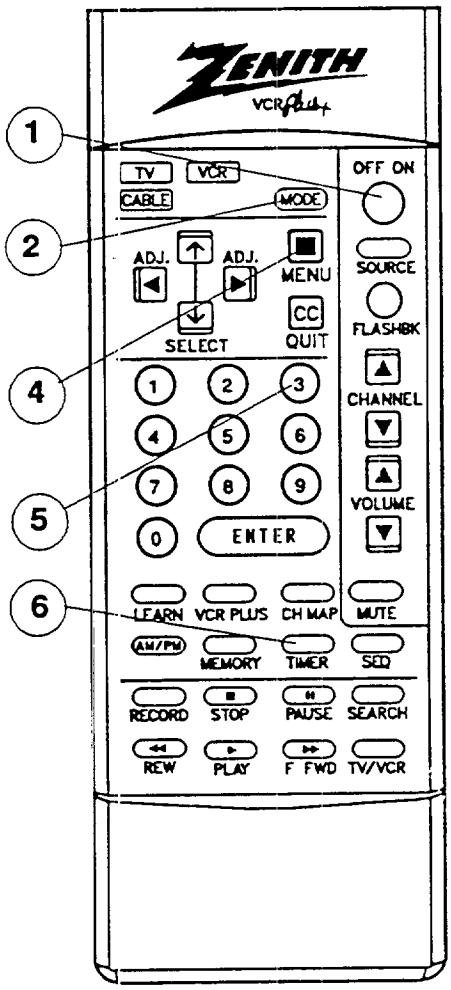


Timer Recording



Note: The clock/date must be set correctly to have the program recorded at the right time.

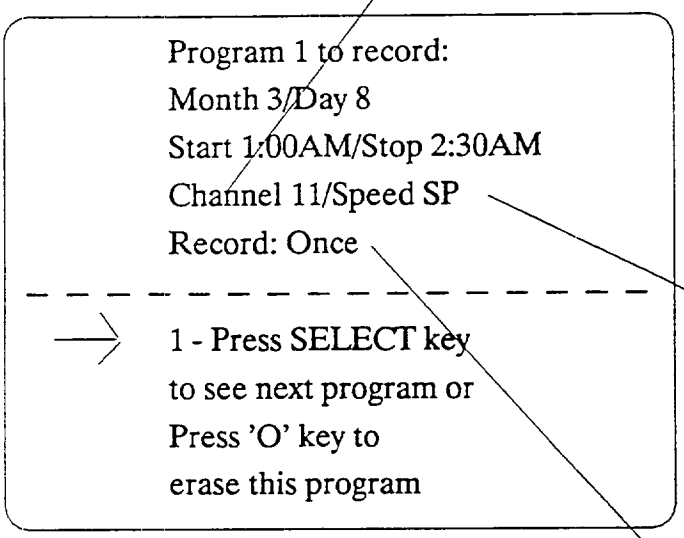
1. Turn the TV on and tune to channel 3.* (If you programmed the remote to operate your TV, press **3**, then **ENTER**.) *See Footnote at the bottom of page 6-1.
2. Change the remote control to VCR mode.
3. Insert a VHS tape into the VCR tape loading compartment. If this is a new tape it will be cued to start at the beginning; if this is a previously recorded tape, advance or rewind the tape to the position where you want to begin recording.
4. Press **MENU** on the remote control to bring up the Main Menu (VCR Features). Press **2** to bring up Program Record. Follow the on-screen instructions, and enter the recording information for Program 1; check for accuracy when complete.
5. Enter the information for Program 2; if there is one. Check Program 2 information for accuracy, etc. Press **3** to bring up Program Review, if needed, to check for accuracy what you entered for Programs 1 and 2, etc.
6. When programming is complete press **TIMER** on the remote control to set the VCR in Timer mode; **TIMER SET** will appear in the VCR message center. When recording assignments have been completed **TAPING DONE** will appear in the VCR message center. If necessary, press **TIMER** to release the VCR from Timer mode.



Note: While the VCR is operating in the Timer mode it cannot be turned on or off manually, and other features available in modes like PAUSE and STOP, will not be available.

Additional Timer Recording Operations

Program Review



Note: To quit press QUIT key

Automatic Tape Switching

If you are using Timer Recording to record a program at SP (Standard Play) speed, and there is not enough tape to complete the recording, the VCR will automatically switch to EP (Extended Play) speed. There will be some distortion in picture and sound at that point on the tape. The VCR will switch to EP Speed when there would be 10 minutes of tape left at SP speed, giving you 30 minutes of tape left at EP speed.

Tuning Band

Channel -- will be selected automatically if you specified TV in the Tuning Features, Tuning Band submenu.

CATV -- will be selected automatically if you specified CATV in the Tuning Features, Tuning Band submenu before you entered the Timer program.

Aux Input -- must be specified to record FM radio broadcasts or to use a surveillance camera connected to the VIDEO/AUDIO input jacks on the back of the VCR.

Recording Speed

SP -- Standard Play is the best for video reproduction.

LP -- Long Play will extend the recording time available on the tape.

EP -- Extended Play will triple the recording time over Standard Play.

Recording Selection

Once -- will record a broadcast one time.

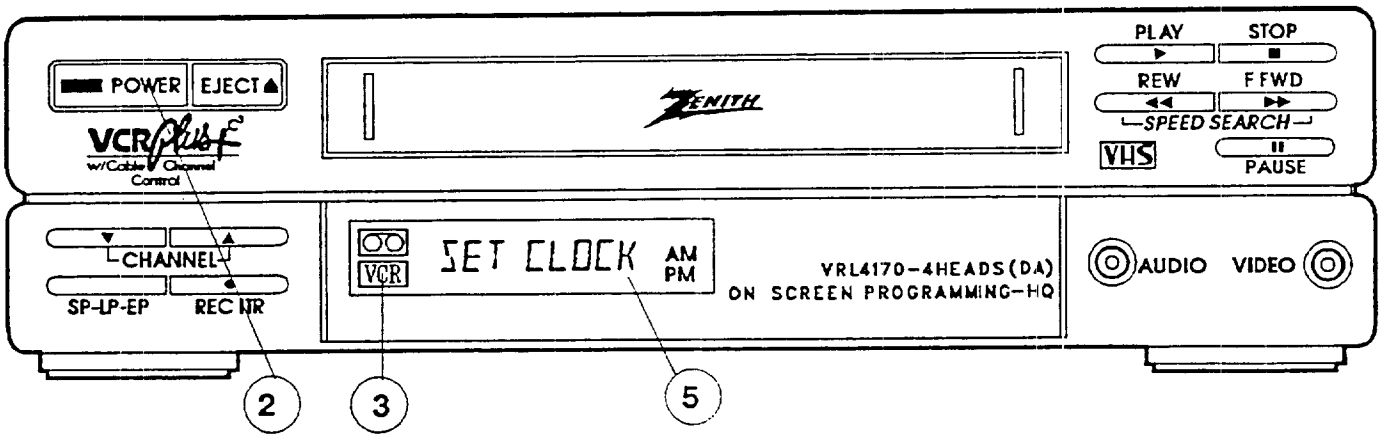
Weekly -- will record a broadcast one time each week.

Daily -- will record one broadcast, one time each day, Monday through Friday.

The VCR Timer automatically sorts through the recording information and sets up the broadcasts based on starting times.

Note: If recording times overlap, the on-screen menu system alerts you to that fact as you are programming the VCR for recording.

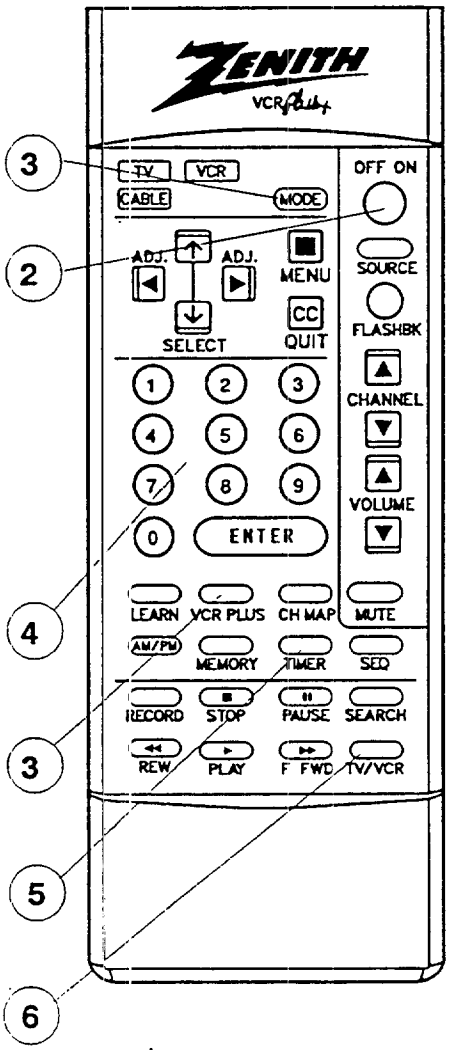
VCR Plus Recording



Note: The VCR Plus Setup beginning on page 11-1 must be completed before you can record using the VCR Plus feature. Make sure all cables are connected properly and that the date/time in the VCR clock are correct.

1. Get VCR Pluscode number from your local TV guide. Consult your local TV guide and get the Pluscode number printed with the broadcast you want to record. If there isn't any Pluscode number then use regular Timer recording.
2. Turn on all system components. Turn on VCR, TV, cable/converter box etc. Tune the TV to Channel 3*.
3. Switch remote to VCR mode. Press **VCR PLUS** on the remote control to place Pluscode menu on the TV screen.
4. Enter the VCR Pluscode using the numbers on the remote. The Pluscode can be up to nine digits. Enter all requested information for Program 1 and check for accuracy. Press **SELECT** to enter information for the next Program; if there is one.
5. Press **TIMER** to set the VCR into Timer mode. The VCR will remain off until broadcast time; **TIMER SET** will appear in the VCR message center window.

   Note: While the VCR is in Timer mode it cannot be turned on manually and all functions will not be available.
6. After recording is complete, if necessary, press **TIMER** to release the VCR from Timer mode.



Note: A recording/viewing TV option is to use the **TV/VCR** key on your remote control to switch the TV screen image from the picture being received by the VCR tuner to the picture being received by the TV Tuner, then manually use the TV tuner to select the channels for viewing. Using this method of watching TV, you will not interfere with the Timer mode programmed into the VCR.

* Or 4, the same channel that you set with the **CH3-4** switch on the back of the VCR to send the VCR signal to the TV set.

VCR Plus Recording

VCR Plus Description

VCR Plus is a quick method of programming your VCR to record while you are away. When you enter the 9 (or less) digit Pluscode the VCR automatically enters the start time, stop time and selects the channel number of the broadcast you wish to record. All you have to do is select the recording speed and whether you wish to record the broadcast Once, Daily or Weekly. When the time of the broadcast arrives, the VCR automatically tunes to the channel of the broadcast, or tunes the channel on the cable/converter box (if you have one).

Note: Cable/Converter Box Users

- This VCR will control most models made by different cable/converter box manufacturers. However it may not control all the models of all the cable/converter box brands currently available in the marketplace. Also, some older model cable/converter boxes are manually controlled; they cannot be controlled by this VCR. Speak with your cable company about an IR (Infra-red) controlled cable box.

Notes: Users Without a Cable/Converter Box

- If you do not have a cable box, but you subscribe to CATV, you will still have to program your VCR to receive VCR Plus listed channels. If you do not do the Channel Map procedure the broadcast you record may be from a different station than the one you intended.
- If you do not have cable you can still use the VCR Plus feature to record over-the-air programs. If necessary, channel map for your local broadcast area. If you do not do the Channel Map procedure the broadcast you record may be from a different station than the one you intended.

VCR Pluscodes

These Pluscodes are printed in your local TV guide with each program description. This nine digit (or less) Pluscode number may be included with each program.

	7:00pm	7:30pm
HBO	Wilderness 13569	Air War 27689957
MAX	Comedy 2468927	Journal 34567821

VCR Plus Recording Notes

Some local TV guides publish program listings for an entire week. Each 24 hour day and the programs to be broadcast on that day, are contained in a 24 hour listing. Each program has its own Pluscode. Use the Pluscode specified for each program you wish to record, once, daily or weekly.

Other TV guides publish the daytime programs; soap operas, serials etc., only on Monday, with the VCR Pluscodes listed only for that day; the Tuesday, Wednesday, Thursday and Friday Pluscode listings for those programs (since they are mostly repeats) are omitted to save space. To record broadcasts with Pluscodes on days other than Monday use the Daily or Weekly recording modes to eliminate the possiblity of receiving an error message. After the broadcast(s), simply erase the remaining programming information from the VCR's memory. Press **MENU**, Choose 3-Program Review, Enter 0 to erase programming information.

Plan Your Recording Times.

Although your VCR can be programmed to record up to 8 programs at a time it may be advantageous not to enter that many programs at one time.

When you plan your recording week, the recording sequence may call for inserting several different tapes, at different times or on different days. For example, if you plan on recording a program Monday, Wednesday and Friday while you are away—a soap opera perhaps. But also want to record a mini-series broadcast on Tuesday and Thursday 7 to 9pm, you probably would want to use different tapes for each. In this scenario record your daytime program Monday. Take out that tape and insert a different tape for the first part of the Mini-series recording. Reinsert the tape with the Monday program and record the additional program on Wednesday. Take out that tape. Reinsert the Mini-series tape to record on Thursday, and so on. In this way the TV can be used with the VCR tuner for your viewing alternatives; programs you will watch but do not want to record.

VCR Plus Setup

VCR Plus Setup Introduction

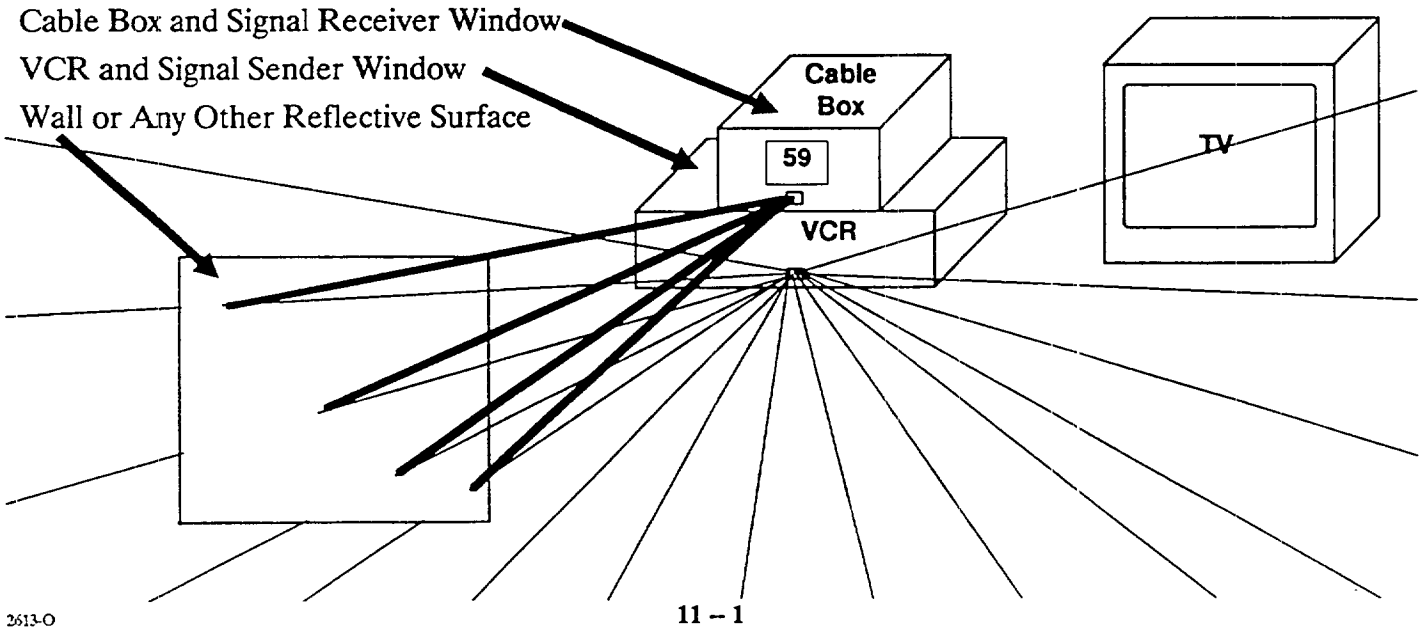
The VCR Plus setup is as simple as pressing the **CH MAP** key on the remote control and following the on-screen instructions. However, you must perform the preliminary setup and be prepared to answer or perform the on-screen instructions.

Preliminary Setup

Certain VCR options must be selected to allow the VCR Plus Setup procedure to be performed.

1. **The cable/converter box and the location of the VCR are critical to VCR Plus recording.** The VCR has a window through which the codes are sent to the cable box. This signal is sent out by the VCR and reflected off most surfaces in such as way that the cable box will receive the signal from many different angles; the signal will literally fill the room. For the cable box to receive this signal, the positions of the VCR and the cable box are important. No obstructions should be in the path of the receiving window on the cable box, or in the path of the sending window on the VCR. In other words, do not place any objects in the signal path of the VCR or cable box, such as coffee cups, ashtrays, books, etc.(See illustration below.) Note that the cable/converter box is located on the top and at the front of the VCR. Note that the signal sent out by the VCR is being reflected off the reflective surface or wall and bounced back to the cable/converter box signal receiving window. Note that the cable box has tuned to Channel 59.
2. **The source select option must be set to Tuner.** Press **Menu**, choose 4-Tuning Features. Press 4-Source Select. Press **ADJ** to place the arrow next to Tuner. Press **QUIT**.
3. **The Tuning Band selected must be CATV.** Press **MENU** on the remote control. Choose 4-Tuning Features. Choose 1-Tuning Band. Press **ADJ** to place the arrow next to CATV. Press **QUIT**.
4. **The VCR's clock date and time must be set correctly.** Press **MENU**, choose 1-Clock Set, follow the on-screen instructions. Press **QUIT** when done.
5. **The VCR, cable/converter box and TV set must be turned on.** The TV must be set to Channel 3; set CH 3-4 switch on the back of the VCR to 3. Note: If you chose to set the

VCR and Cable Box Location/Relationship



CH 3-4 switch on the back of the VCR to 4, then tune the TV set to Channel 4.

6. **The cable/converter box output wire must be connected to the VCR ANT IN jack on the back of the VCR to be able to use the VCR Plus feature.** (See page 4-3, Figure 2.)

VCR Plus Setup

Channel Map Procedure

1. Press CH MAP

Press **CH MAP** on the remote control; follow the on-screen instructions, answer the questions and enter the requested information.

Choose 1- CH Map Setup.

Answer question, Do you have a cable box?

If No, proceed to page 11-3 Step 4, Channel Mapping.

If Yes, you may have to turn the cable/converter box on manually when you want to use the VCR Plus recording feature.

If yes, is cable box connected to VCR "ANT IN"?

As mentioned in Preliminary Setup, the VCR must be connected to the cable/converter box as detailed on page 4-3 Figure 2, to be able to record premium channels.

2. Enter Your Cable/Converter Box Output Channel Number

The cable/converter box output channel number is usually 3 or 4; the number could also be 2, 5, or 6.

Note: This number may be printed on the cable/converter box back panel or in the cable/converter box operating guide. If the number is not located in either place then call your cable company and ask them for "The Cable Box Output Channel Number."

3. Enter Your MFR Number

Enter your "MFR" number from the list on page 11-3; the system test is automatically initiated and the cable box should then tune to Channel 59 and Channel 59 should remain selected.

If the first number does not work, try the other "MFR" numbers for your cable brand in sequence; try the next, then the next etc. If none work try relocating the cable box and VCR to a different location or relationship. If you have successfully placed the components, the cable box will automatically tune to Channel 59 and Channel 59 will remain selected.

Note: These MFR numbers were determined by the Gemstar Corporation from tests with most popular cable boxes and then compiled and presented in list form for manufacturers who are employing the VCR Plus technology.

The manufacturer's name could be printed somewhere on your cable/converter box. Locate the name in the MFR Number List on page 11-3 and write down the 1 or 2 digit MFR number on a sheet of paper. Some manufacturers may have more than one number. Write down all the MFR numbers for your particular cable/converter box manufacturer. One of these MFR numbers may be accepted to program the VCR to send the signal that will control your cable box. If your cable box does not have a manufacturer's name, call your cable company and ask for "the Cable Box Manufacturer's Name."If none of these numbers work enter 99 for the MFR number; the VCR will not control the cable box.

New MFR Numbers

The MFR Number List on page 11-3 is a current listing of all available MFR numbers to date. If your cable/converter box does not tune to Channel 59, perhaps a newly created MFR number will work that has not yet been published. In this case try entering all MFR numbers starting with number 1 and continue through MFR number 83 to see if the cable box will tune to Channel 59, and have Channel 59 remain selected.

VCR Plus Setup

MFR Number List

Archer	1, 29, 42, 44, 76
Cabletenna	29
Cableview	42, 44, 63
Century	44
Citizen	30, 42, 44, 52
Curtis	8, 9, 56, 61
Diamond	29, 44, 76
Drake	37, 67, 71
Eagle	13, 20, 21, 22, 23, 25, 58, 62
Eastern	28
General Electric	57
General Instruments	1, 2, 3, 4, 34, 55, 75, 83
GC Electronics	42, 44, 63
Gemini	4, 30
Gerrard	44
Hamlin	14, 15, 28, 41
Hitachi	31, 79, 80
Jerrold	1, 2, 3, 4, 34, 55, 75, 83
Jerrold Starcom	1, 3, 4, 55
Macom	31, 79, 80
Maganavox	13, 20, 21, 22, 23, 25, 26
Matsushita	16
Movietime	32, 38, 39, 40, 60
NSC	32, 38, 39, 40
Oak/Oak Sigma	10, 11, 12, 13, 46, 47
Panasonic	6, 16, 17
Philips	13, 20, 21, 23, 24
Pioneer	5, 6, 78
Pulser	42, 44
Quest	78
RCA	6, 16, 17
Realistic	44, 51, 53
Recoton	44
Regal	14, 23, 41
Regency	28
Rembrandt	29, 32, 42, 44, 60
SL Marx	4, 6, 42, 78
Salora	68, 72
Samsung	4, 6, 32, 42, 78
Scientific Atlanta	8, 9, 56, 61
Sheritech	27
Signal	26
Sprucer	6, 16, 17
Stargate	4, 6, 42, 44, 78
Starquest	6
Sylvania	19
Teknika	54, 74
Telecaption	77
Teleview	4, 6, 40, 42, 78
Texscan	18, 19
Tocom	1, 33, 34, 42, 48, 49, 73
Toshiba	36, 66, 70
Uniden Satellite	65, 69
Unika	29, 42, 44, 76
Universal	42, 43, 44, 52, 63, 82
Videoway	7, 45, 50, 59
Vid Tech	64
Vidter	64
Viewstar	13, 20, 21, 22, 23, 25, 40, 58, 62
Zenith	7, 23, 45, 50, 59

All other cable/converter boxes use: 99

Note:
If the system test was not successful enter 99 as the MFR number. If the system test is not successful then the VCR cannot control the cable box functions. You will have to turn on the cable box and tune the channels manually for each recording.

4. Channel Mapping

The last step is Channel Mapping. The listed channel numbers in your TV guide may have to be mapped to the local cable company's "assigned" TV channel numbers for your cable company's broadcast area. Change each listed number to your cable company's assigned number as required.

LISTED TV Channel Numbers

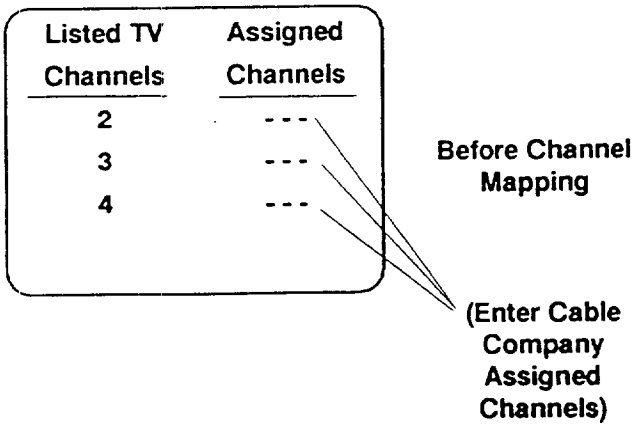
These listed channel numbers used in the VCR Plus system are ordinarily included in your local TV guide and may be called VCR Plus Channel Numbers. You may find them in a separate VCR Plus section of your local broadcast area's TV guide

Cable Company ASSIGNED TV Channel Numbers

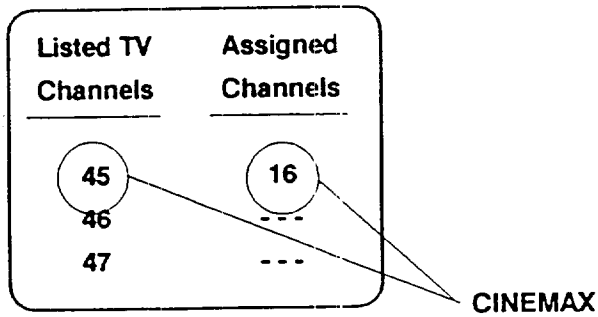
The channel numbers included with your cable company's program guide are called **Assigned** channel numbers. These number are arbitrarily assigned by your cable company. The "Premium Channels" like HBO and Cinemax often have cable company assigned TV channel numbers different than the local TV guide's listed TV channel numbers. For example, Cinemax may be listed as Channel 45. In the Fort Wayne Indiana

VCR Plus Setup

Example: Listed/Cable Company Assigned Numbers



EXAMPLE: Channel Mapping For CINEMAX



cable system, to receive Cinemax you would have to "assign" Channel 16 on the Listed TV Channels number 45 line. (See examples above.) If several different cable companies service your local broadcast area, each cable company's assigned TV channel numbers may be different for each cable company. The VCR cannot be programmed at the factory with the multitude of cable companys' TV channels for a given local broadcast area; you have to determine and enter these cable company's TV assigned channel numbers manually during the Channel Mapping Procedure. Use the worksheet provided on the next page.

This will complete the VCR Plus Setup Procedure. You are now ready to record programs using VCR Pluscodes. (See Page 10-1.)

Notes:

If you entered 99 for your MFR number you will have to manually select each channel you wish to record at the cable box.

If you move to a different location, a different broadcast area, do the Channel Mapping procedure over.

If you do not do the Channel Map procedure the broadcast you record may be from a different station than the one you intended.

To change Channel Mapping information in the VCR's memory press **CH MAP**, select 2-CH Map Review, make the necessary adjustments.

"To find out which publications in your area carry the PlusCode™ numbers, please call 1 800-2584-827"

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VCR Plus Setup

Listed/Cable Company Assigned TV Channels for Your Local Broadcast Area

On the worksheet below write in (with a pencil) your cable company's local broadcast area's assigned TV channels and the broadcast channels for reference when performing the channel map procedure. If necessary, change any of the listed numbers for the cable networks below to conform to your local broadcast area. Use your cable company's TV guide for reference.

Listed/Cable Company's Assigned Channels Worksheet

Listed TV Channels (printed in your local TV guide). Write in broadcast channel numbers.	Cable Company Assigned TV Channels in Your Local Broadcast Area (Write in both broadcast and CATV channel numbers).
Over-the-Air Broadcast TV Channels VHF/UHF	
CBS	
NBC	
ABC	
PBS	
PBS	
Cable Network TV Channels CATV	
A & E 39	
AMC 35	
BRAV 54	
CNBC 19	
CNN 42	
COM 21	
C-SPAN (SATELITE)	
DIS 53	
DISC 37	
ENC 70	
ESPN 34	
FAM 47	
HBO 33	
LIFE 46	

Listed TV Channels (printed in your TV guide).	Cable Company Assigned TV Channels in Your Local Broadcast Area (Write in CATV channel numbers).
Cable Network TV Channels CATV Continued	
MAX 45	
MTV 48	
NICK 38	
SHOW 41	
SC 59	
TBS 43	
TLC 51	
TMC 58	
TNN 49	
TNT 52	
USA 44	
VH-1 62	
WWOR 60	

Note: Some of these number may vary in your particular broadcast area. Consult your TV guide; make any necessary additions or deletions.

Additional Operations

Recording Speed Selection

Your video recorder can record in three speeds: Standard Play (SP), Long Play (LP), and Extended Play (EP). SP provides better picture quality. EP provides longer recording time.

How much you can record depends upon the recording speed you select and the video cassette tape length you use. Video cassettes come in varying lengths as shown in the table below.

All tapes, regardless of brand name, are designated by the letter "T" and by a two or three digit number. The letter stands for time and the number represents the amount of time (as expressed in minutes) available for recording in SP (Standard Play). As indicated in the table below, the total amount of recording time available on any video cassette is doubled when LP is selected and tripled when EP is selected.

Cassette Record/Play Times			
Cassette Length	SP (Standard Play)	LP (Long Play)	EP (Extended Play)
T-30	30 Minutes	1 Hour	1 Hour, 30 Minutes
T-60	1 Hour	2 Hours	3 Hours
T-120	2 Hours	4 Hours	6 Hours
T-160	2 Hours, 40 Minutes	5 Hours, 20 Minutes	8 Hours

Real Time Tape Counter Display

The real time tape counter, which appears on the TV screen, shows you the amount of time which has elapsed from the point at which the tape was inserted in hours, minutes and seconds. You can also use the tape counter along with Index Search (described on the next page) as a guide for locating different programs on a tape.

Tape Counter Resets Automatically

When a tape is inserted into the VCR the counter is automatically reset to **0:00:00**. Once the counter is reset, the elapsed time begins from that new position.

To Display Elapsed Time

Press **RECORD** or **PLAY**. As the tape advances, the tape counter times precisely in hours, minutes and seconds.

Press **ENTER** to display the on-screen display, which includes the real time tape counter.

Press **ENTER** a second time to display counter time only.

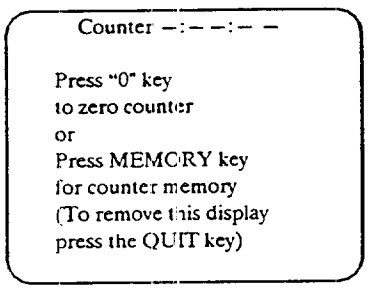
Press **ENTER** a third time to display remaining time.

Press **ENTER** a fourth time to eliminate all displays.

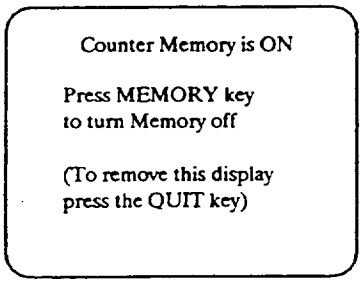
Tape Counter Memory

This feature has two positions; On or Off. This feature enables you to return to a desired point on a tape. Any point may be selected as your reference by doing the following:

1. Press **RECORD** or **PLAY**.
2. Allow the tape to reach the desired point.
3. Press **MEMORY** on the remote control to display the following information on screen.



4. Press "0" to zero the counter at that location. Press **MEMORY** to be able to return to that location on the tape. The following display will appear when counter memory is on.



5. Press **QUIT** to remove counter display.

To Return to a Desired Point

1. Press **STOP**.
2. Press **REW**. The tape will rewind to the selected zero memory position.

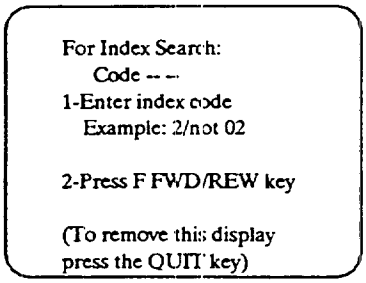
Index Search

Index Search works like an electronic bookmark. Each time you start a recording, an index mark is placed on the control track of the video tape, where it will not interfere with the audio or video. During Play mode or Stop mode, you can access any one of these marks (up to a total of 99) either in fast forward or reverse.

To Start Index Search:

From the PLAY or STOP mode:

1. Press **SEARCH** on the remote control. The following display will appear on the TV screen:



2. Press a numbered key that corresponds to the number of index marks to be passed on the way to the Index destination from the present tape location. (Up to 99 marks can be detected on an individual tape.)
3. Using the remote control press either **F FWD** or **REW** briefly. If either key is held down too long, the fast forward or rewind mode will engage. **INDEX** and the index number appear in the VCR message center. The tape advances or rewinds past the number of index marks entered. Playback begins automatically from that mark.

To Stop Index Search

Press **PLAY** or **STOP**. Note: If the end of the tape is reached during search, the Index mode is cancelled and the tape rewinds.

Additional Operations

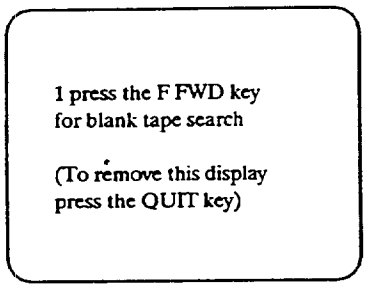
Blank Search

Blank Search allows you to find the beginning of (and tell you the recording time available on) a section of video cassette tape.

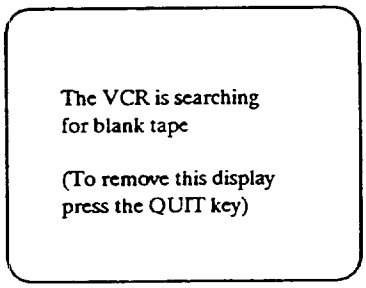
Before you begin Blank Search, rewind the tape to the beginnning.

From the Stop Mode:

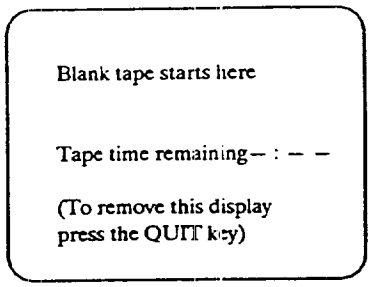
1. Press **SEARCH** on the remote control. The Index Search display will appear.
2. Press **SEARCH** again. The following display will appear on the TV screen.



3. Press **F FWD**. The following display will appear briefly on the TV screen; the VCR will search for blank tape.



When the VCR finds a section of blank tape, the following display will appear.



If no blank tape is available, the VCR will rewind the tape to the beginnning.

Double Speed Playback

This feature enables you to play a tape at twice the normal speed.

To Adjust Playback Speed:

1. Press **PLAY** to start playing a tape.
2. Press **PLAY** a second time to double playback speed. (Audio will not be heard.)
3. Press **PLAY** again to return to normal playback speed.

VCR Flashback

VCR Flashback allows you to view the TV program the VCR Tuner is receiving while viewing a video tape, without stopping the tape.

To Operate VCR Flashback:

1. Press **FLASHBK** on the remote while playing a tape to view the TV program that is being received by the VCR tuner.
2. Press **FLASHBK** again to return to viewing the tape.

Service Information

Before Calling for Service

Following are some common problems associated with operating a VCR. Please refer to the following Problem/Resolution Chart before calling for service.

Problem/Resolution Chart

Operating Problems		
Observed Condition	**Possible Cause**	**Probable Solution**
No power to the VCR.	Power cord is not connected.	Connect power cord.
VCR cannot be turned on.	**TIMER SET** or **TAPING DONE** appear in VCR message center; VCR is in Timer Mode.	Press **TIMER** to release VCR from Timer mode.
Remote control does not function.	Batteries are weak.	Replace with new batteries.
No picture appears on TV screen from a channel selected using the VCR Tuner. VCR symbol is lighted in message center.	TV not set to channel 3.	Set TV to channel 3. (Be sure CH3-4 switch on back of VCR is set at CH-3.)
Message Center Displays **SET CLOCK**	There has been a power failure.	VCR will have to be reprogrammed. Set clock to the correct time; redo channel search if necessary.
Playback Problems		
Tape will not rewind or fast forward.	Tape is fully rewound or fast forwarded.	No action required.
VCR operating sound is audible during operation.	Note: This is normal operating sound that will come from the internal mechanical mechanisms.	
Tape playback picture does not appear on TV screen.	TV not set to channel 3. (Be sure the VCR symbol is shown in the VCR message center.)	Set TV to channel 3, make sure the VCR switch is set to the same channel. Press **TV/VCR** on the remote control to switch to VCR Mode. VCR symbol will be shown in VCR message center.
Video "Noise" appears during normal playback.	Tracking adjusted automatically.	Adjust tracking manually for tapes that have been recorded on other equipment.
	Tape heads are dirty.	Clean video heads.

Recording Problems		
Observed Condition	**Possible Cause**	**Probable Solution**
Camcorder image is not shown on TV screen.	Source is set to TUNER.	Set source to Aux.
Camcorder is not recording.	Camcorder is off.	Turn camcorder on.
Tape does not run during recording.	**REC PAUSE** appears in VCR message center; VCR is in Pause mode.	Press **PAUSE** to release VCR from Pause mode.
TV broadcasts cannot be recorded.	Source Select is set to Aux.	Set source to Tuner.

Timer recording is not possible.	Clock is not set to correct time.	Set clock to correct time.
	Timer has not been programmed correctly.	Reprogram timer.
	TIMER SET is not on in VCR message center.	Press **TIMER** to set VCR into Timer mode.

Tuning Problems		
Some channels are skipped over when scanning channels.	Those channels are preset to be skipped.	Restore channels to channel search sequence; select SAVED next to channel Skipped/Saved.
Channel cannot be switched.	VCR set to Timer mode.	Press **TIMER** to release VCR from Timer Mode.
Picture and sound are weak or missing.	Antenna cable is loose.	Tighten connections or replace cable.

Maintenance

Automatic Head Cleaning

Your video recorder has a built-in head cleaner that automaticallly cleans the video head drum assembly whenever a tape is loaded or unloaded. This Auto Head Cleaner reduces head clogging.

Video Head Cleaning

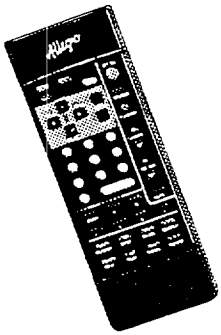
After long periods of use, the video heads may become clogged with accumulated dirt, causing distortion. When this occurs, use do-it-yourself wet head cleaning cassettes available through your Zenith dealer.

CAUTION: Do not use dry head cleaning systems. They may seriously damage both the video recorder and cassette. When visual signs appear (snow, streaking in picture and horizontal pulling of picture) indicating the need for video head cleaning, please see your Zenith approved service center.

Cabinet Cleaning

The outside surfaces of the video recorder may be cleaned with a soft lint-free cloth as required. Use care not to scratch the VCR message center window during cleaning.

RECOMMENDED ACCESSORIES FOR YOUR VCR



MBC400P 3 FUNCTION MULTI-BRAND REMOTE CONTROL (2 lbs)

Combining three remotes into one has never been easier. Operate your TV, VCR and cable converter with one remote control.

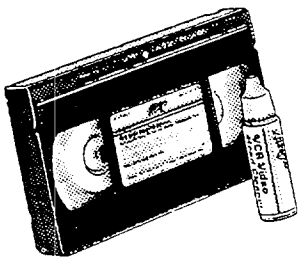
- Electronic mode switching
- Easy set-up: simply depress the "Learn" key for 5 seconds and enter the three digit pre-programmed code
- Operate on-screen menus and displays
- Ideal replacement for lost or broken remotes

ONLY $29.95
Plus shipping and handling

ALG1140 ONE WAY VIDEO REWINDER (2 lbs)

Rewinding tapes in your VCR or full size camcorder causes unnecessary wear on your delicate video heads. By using our Allegro VHS tape rewinder, you can help keep your equipment in top shape.

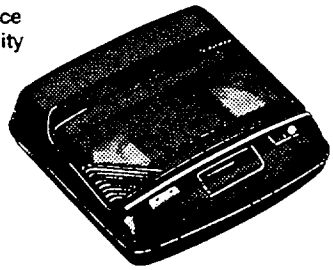
ONLY $12.95
Plus shipping and handling



ALG1310 VHS HEAD CLEANER (1 lb)

Keep your VCR or full size camcorder performing at its best with Allegro's VHS head cleaner. Monthly maintenance helps preserve picture quality and color sharpness.

ONLY $9.95
Plus shipping and handling



ALG1141 2 WAY HIGH-SPEED VIDEO TAPE REWINDER WITH FAST FORWARD (2 lbs)

Allegro's 2 way high speed rewinder works twice as fast as a regular rewinder, and features an electronic eye that senses the end of the tape to prevent snapping. Automatic soft eject and power shut off for added convenience.

ONLY $39.95
Plus shipping and handling

Special BONUS for orders over $100.00! Receive a FREE Allegro gift valued at $10.00!

Order Form — **Photocopy Page and Detatch Here**

To take advantage of this exciting offer, please fill out this card and return a photocopy to:

Attn: Accessory Offers
Zenith Video Tech Corporation
1900 N. Austin Avenue
Chicago, Illinois 60639

Charge card customers, to speed your order, call toll free 1-800-255-6790

Check payment method you prefer:

☐ Check or money order
(made payable to Zenith Video Tech)

☐ Visa ☐ Mastercard

Account Number

Exp. date _____

Signature _____

PLEASE ALLOW 3-4 WEEKS FOR DELIVERY. THANK YOU!

To receive information on other fine accessory products like those above, please take a moment to complete the following:

VCR Model # (from back of unit) _____

VCR Serial # (from back of unit) _____

Mo. Day. Yr. (Approx. date of purchase) ___/___/___

Item Number	Description	Quantity	Price Per Item	Total Price	Ship Weight

Sales Tax: Please add your state sales tax if you live in one of the following states.

CA 7 3/4%, GA 4%, IL 8 3/4%, KS 4.8%, KY 6%, ME 6%, PA 6%, RI 7%, TX 7 3/4%, VA 4 1/2%, WA 6 1/2%

Subtotal		Total Ship Weight
State Sales Tax		____ lbs
Ship Charges (See Chart)		
Total Amount of Order		

Shipping Information

Total (Lbs) Ship weight	Charge
1 - 5 lbs	$4.50
6 - 10 lbs	$5.35
11 - 15 lbs	$7.00
16 - 20 lbs	$8.75
26 + lbs	$10.45

Ship to:

Telephone _____

Name _____

Address _____

Apt # _____ City _____

State _____ Zip Code _____

NOTE: Price and availability subject to change.

VCACCES1

Product Registration Card

You could win a full refund on your new Zenith product.

Look for the Product Registration Card on your new video product.

Each month a drawing is held by Zenith from the completed Product Registration Cards received during the preceding month. Zenith will reimburse the winner for the full purchase price of the product purchased.

In order to participate, simply complete and return the Product Registration Card at once, even if you choose not to complete the information and interests portion of the questionnaire.

The odds of winning the free drawing described above depend on the number of participants. Free drawing offer is void in Canada and other places where restricted or prohibited by law. Offer is void for Hotel/Motel and Institutional models. Rental models are not eligible.

Product Card lost or misplaced?

The Product Registration Card furnished with your video product is pre-printed with its Model and Serial numbers. Please fill out the card and mail it at your earliest convenience. It is imperative that Zenith know how to reach you promptly if we discover a safety problem that would affect you. If the original card has been lost or misplaced, you may use the replacement card provided below. Either card will qualify you for the free drawing, but you are limited to only one entry in the drawing. Complete the card, place it in an envelope and mail it to:

Zenith Electronics Corporation
P. O. Box 173262
Denver, CO 80217-3262

Use the replacement Product Registration Card only if the original card has been misplaced or lost.

PHOTOCOPY AND CUT ALONG DASHED LINE

Zenith Product Registration Card H5Y01-01

(1) Please Print Clearly or Type

1. ☐ Mr. 2. ☐ Mrs. 3. ☐ Ms. 4. ☐ Miss

(2) Area Code Telephone

First Name Initial Last Name

Street Apt. No.

City

State Zip Code

(3) Date of Purchase

Mo. Day Yr.

MODEL NUMBER

Copy Numbers Here From Label on Set

SERIAL NUMBER

Please record the model number and serial number from the sticker on the back of your set.

VRL4170 Quick Reference Guide

Quick Play Setup

To play a tape follow this sequence.

1. Turn on the TV and tune it to channel 3.
2. Make sure the Ch3-4 slide switch is set to channel 3 on the back of the VCR.
3. Turn on the VCR, press **POWER** on the front of the VCR or insert a VHS recorded tape into the VCR tape loading compartment.
4. Press **PLAY**.
5. When finished watching the tape press **STOP** then **EJECT** to eject the tape. Pull the cassette tape straight out of the VCR.
6. To return to normal TV viewing turn off the VCR.

Setting The Clock

Turn on the TV set and the VCR.

Tune the TV to channel 3.

Change the remote control to VCR mode.

Press **MENU** on the remote control to place the Main Menu (VCR Features) on the TV screen.

Press number **1** to bring up the Clock Set submenu. Follow the on-screen instructions and enter the information for the current time. Enter Month, Date, Year etc. (Day of the week, Monday Tuesday etc., comes on automatically). When finished press **QUIT** to exit the Clock Set Menu.

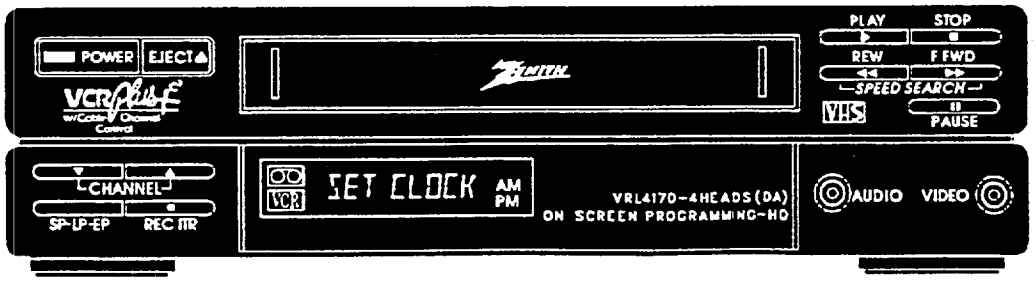
Recording Tapes

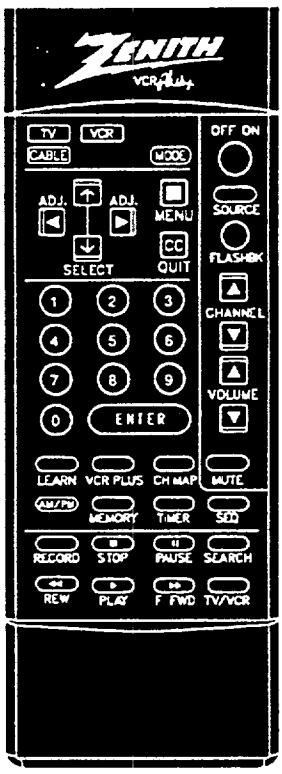
Turn on both the TV set and VCR. (You must have specified either TV or CATV in the Tuning Features submenu, see Installation Section.)

Insert a videotape cassette into the cassette loading compartment. (Make sure the safety tab on the video cassette is intact.)

Select Channel 3 on the TV set. Use the VCR Tuner to select the channel you wish to record. When the TV program comes on you wish to record simply press and hold **RECORD** on the remote control or **REC ITR** on the VCR until **REC CH** and the channel number you are recording, appear in the VCR message center. Select the recording speed by pressing **SP/LP/EP** repeatedly until the appropriate recording speed appears on the TV screen. You can record a program from 30 minutes up to 4 hours by pressing **REC ITR** to choose the time.

Note: For recording CATV (cable) broadcasts the cable box must be on and tuned to the same channel you wish to record.





VRL4170 Quick Reference Guide

Recording Using the Timer

Turn on both the TV set and VCR. (You must have specified either TV or CATV in the Tuning Features submenu, see Installation Section.)

Insert a VHS video cassette tape into the cassette loading compartment on the front of the VCR. Make sure the safety tab on the video cassette is intact.

Select channel 3 on the TV set.

Change the remote control to VCR mode.

Press **MENU** on the remote control to choose the Main Menu (VCR Features).

Select 2-Program Record.

Enter the required information using the remote control. Date of the Program. Start Time and Stop Time. Choose the Channel. Choose the Recording Speed. Choose the number of times you want to record this program, Once, Weekly (1 time each week) or Daily (the same time each day Monday through Friday).

When finished programming the Timer, press **TIMER** once to turn off the VCR and set it into Timer Recording mode.

Note: The VCR cannot be turned on while it is in the Timer mode. If you want to use the VCR before your recorded program broadcast time, press TIMER on the remote control to release the VCR from the Timer mode. Once the Timer is activated **TIMER SET** will appear in the VCR message center.

When the program comes on that you wish to record you can also watch it, press **TV/VCR** once on the remote control then turn on the TV set and tune it to channel 3.

Note: For recording CATV (cable) broadcasts the cable box must be on and tuned to the same channel you wish to record.

When the timed program is finished the VCR will turn itself off until the next timed program (if there is one); if not press **TIMER** to release VCR from Timer mode.

Recording/Playing Tapes with a Camcorder

Turn on the TV set and the VCR.

Press **MENU** on the remote control to choose the Main Menu (VCR Features).

Choose 4-Tuning Features; press the number 4 key. This brings up the Tuning Features sub-menu.

Press number **4** to choose Source Select.

Press **ADJ** to place the arrow next to the word AUX. Camcorders use the AUX inputs – **AUDIO/VIDEO IN**. (When finished recording you will reset the arrow so it points to TUNER).

Connect the camcorder cables into the **VIDEO IN, AUDIO IN** jacks on the back of the VCR.

Insert a VHS cassette into the VCR cassette loading compartment. Make sure the safety tab is intact.

Turn on the camcorder and start recording/playing. (Refer to camcorder operating guide for information about camcorder particulars.) To stop recording/playing momentarily, press **PAUSE** on the VCR or remote control. When finished recording/playing press **STOP** on the VCR or remote control. To eject the tape press **EJECT** on the VCR.

When you are finished with the camcorder, the VCR source select option will have to be switched back to TUNER.

Press **MENU** on the remote control.

Press 4 to choose TUNING FEATURES. When that sub-menu comes up on the TV screen press **ADJ** to place the arrow so it is next to the word TUNER; this resets the VCR back to normal VCR mode.

Recording With VCR Plus

Turn on all system components; TV, VCR and cable box. Tune TV to channel 3. Use the remote to switch to VCR mode. Press **VCR PLUS**, follow on-screen instructions. (See page 10-1.)

Your Zenith Warranty

Consumer Protection Plan for Zenith Video Cassette Recorder/Video Player

Welcome into the Zenith family! We believe that you will be pleased with your new Zenith video product. Please read this Consumer Protection Plan carefully. It is a "LIMITED WARRANTY" as defined under Federal Law. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state within the U.S.A.

Zenith's Responsibility

Service Labor – During a period of 90 days from effective warranty date, Zenith will pay for service labor by a U.S. or Canadian distributor-approved Zenith video recorder service center when needed as a result of manufacturing defects.

Parts – New or remanufactured replacements for factory-defective parts will be supplied by a U.S. or Canadian distributor-approved Zenith video recorder/camcorder service center for one year from effective warranty date. Such replacement parts are warranted for the remaining portion of the original warranty period.

Not Covered – This warranty covers manufacturing defects and does not cover installation, adjustment of customer controls in the home, installation or repair of home antenna systems, cable converters or cable company-supplied equipment; it also does not cover damage due to misuse, abuse, negligence, acts of God or other causes beyond the control of Zenith. Any alteration of the product after manufacture voids this warranty in its entirety.

Owner's Responsibility

Effective Warranty Date – Warranty begins on the date of original consumer installation. For your convenience, keep the dealer's dated bill of sale or delivery ticket as evidence of the purchase date.

Operating Guide – Read your operating guide carefully so that you will understand the operation of your video product and how to adjust the customer controls.

Carry-In Service – The video product must be taken to a U.S. or Canadian distributor-approved Zenith video recorder service center for warranty service and must be picked up by the owner.

TV Set Performance – It is the owner's responsibility to maintain the TV receiver with which the video product is used, and the associated antenna system, in proper operating condition.

Important: Product Registration – Please fill out and mail your Product Registration Card. It is imperative that Zenith know how to reach you promptly if we should discover a safety problem that could affect you.

Warranty Service – For warranty service information, contact your Zenith dealer preferably, or any U.S. or Canadian distributor-approved Zenith video recorder service center. Parts and service labor that are Zenith's responsibility (see above) will be provided without charge. Other service is at the owner's expense. If you have any problem in obtaining satisfactory warranty service, write:

Zenith Electronics Corporation
Customer Service Department
1900 N. Austin Avenue
Chicago, Illinois 60639-5079
Telephone: (312) 745-5152
Mon-Fri, 8:00 a.m. - 4:30 p.m. Central Time

NOTE: Before you ask for Warranty service, check the Operating Guide section entitled, "SERVICE INFORMATION". It may be possible to avoid a service call.

VCRWARR4

ZENITH ELECTRONICS CORPORATION
1000 MILWAUKEE AVENUE
GLENVIEW, ILLINOIS 60025

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